



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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September 20, 2007

Mr. Joel H. Peck, Clerk
Document Control Center
State Corporation Commission
1300 E. Main Street, Tyler Bldg., 1st Floor
Richmond, Virginia 23219

RE: Virginia Electric and Power Company and Trans-Allegheny Interstate Line Company, Northwest Virginia 500 kV Transmission Line, Case No. PUE-2007-00031 and Trans-Allegheny Interstate Line Company, Northwest Virginia 500 kV Transmission Line, Case No. PUE-2007-00033 (reviewed under DEQ-07-100S).

Dear Mr. Peck:

As requested in Mr. Wayne N. Smith's letters (one for each Case Number) dated April 20, 2007 (received April 23), the Department of Environmental Quality (DEQ) has coordinated the review of the above-referenced applications, focusing on the DEQ Supplement for each. The purpose of the review is to develop information for SCC staff about potential impacts to natural resources associated with the proposed power line project. Based on comments submitted by reviewers, we are providing a summary of potential impacts to natural resources from construction and operation of the power line, as well as recommendations for minimizing those impacts and for compliance with applicable legal requirements. This report includes copies of the comments submitted by reviewers.

Thank you for the opportunity to review the application for SCC certification. We trust that you will find our report helpful in your review process. If you have any questions, please feel free to call me at 698-4325 or Ernie Aschenbach at 698-4326.

Sincerely,

Ellie Irons, Manager
Office of Environmental Impact Review

Attachments

cc: Michael P. Murphy, DEQ-DEE
Thomas A. Faha, DEQ-NVRO
Ronald D. Phillips, DEQ-VRO
Paul W. Kohler, DEQ-ORP
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Stephen Kerr, NSVRC
G. Mark Gibb, NVRC
Jeffrey Walker, Rappahannock-Rapidan RC
Frank T. Bossio, Culpeper County
G. Robert Lee, Fauquier County
John R. Riley, Jr., Frederick County
Kirby M. Bowers, Loudoun County
Craig S. Gerhart, Prince William County
Douglas P. Stanley, Warren County
Wayne N. Smith, SCC
James C. Dimitri, McGuire Woods LLP
Richard D. Gary, Hunton & Williams LLP
John Bailey, Dominion
Allen J. Fleissner, Trailco



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COMMENTS OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY

concerning the proposed construction of a 500 kV electric transmission line, to be built in two segments under two State Corporation Commission case numbers, running from Meadow Brook in Frederick County south and east to the Loudoun substation of Dominion Virginia Power Company in Loudoun County, as further described below. Case numbers and applicants are:

- I. PUE-2007-00031, Virginia Electric and Power Company (hereinafter "Dominion") and Trans-Allegheny Interstate Line Company (hereinafter "Trailco"), Meadow Brook to Loudoun 500 kV Transmission Line; and
- II. PUE-2007-00033, Trans-Allegheny Interstate Line Company ("Trailco"), Northwest Virginia 500 kV Transmission Line.

Individual reference to line segments will be made as necessary to Case No. PUE-2007-00031 as the "Meadow Brook to Loudoun line" and to Case No. PUE-2007-00033 as the "Trailco Line." DEQ and reviewing agencies are reviewing the combined projects as a single project, responding with this single set of comments. The Department of Environmental Quality's comments are intended to provide technical assistance to the State Corporation Commission ("SCC") in evaluating the project.

The following agencies, regional planning district commissions, and localities joined in this review:

Department of Environmental Quality (hereinafter, DEQ)
Department of Conservation and Recreation
Department of Game and Inland Fisheries
Marine Resources Commission
Department of Agriculture and Consumer Services
Department of Forestry
Department of Mines, Minerals and Energy
Department of Historic Resources
Department of Transportation
Department of Aviation
Northern Virginia Regional Commission
Culpeper County
Fauquier County
Frederick County

Prince William County
Rappahannock County

The following were invited to provide comments:

Department of Forestry
Northern Shenandoah Valley Regional Commission
Rappahannock-Rapidan Regional Commission
Loudoun County
Warren County.

The information considered in this review was provided by Dominion and Trailco in application documents received by the Department of Environmental Quality and reviewing agencies by May 24, 2007. The Application documents submitted by Dominion include a DEQ Supplement (Volume VI of VI) which is an environmental assessment (EA) of the proposed Dominion-Trailco line. The Application documents submitted by Trailco include an environmental report, (Exhibit JH-1), which serves the environmental analysis purpose for the Trailco line (see "Project Description," next).

PROJECT DESCRIPTION

As mentioned above, overall the project consists of two segments. One company, Trans-Allegheny Interstate Line Company ("Trailco"), would build 28 miles of line from the West Virginia border (adjacent to Frederick County) to the Appalachian Trail crossing. This segment, applied for under SCC Case No. PUE-2007-00033, is referred to in these Comments as the "Trailco line." According to the application (pages 51-54), alternatives considered were assigned letters A through E. However, Alternatives C and D were considered and discarded. Alternative A follows the north side of the existing Allegheny Power 500 kV transmission line from Mount Storm (West Virginia) east to the Virginia State Line where it enters a densely wooded area approximately 2.6 miles north of Mountain Falls, continues east to Little North Mountain, then turns southeast crossing an existing 500 kV transmission line to the south, parallels the south side of this existing line the remaining 5.3 miles within Virginia to the Meadowbrook Substation. Alternative B follows the south side of the same existing Allegheny Power 500 kV transmission line from Mount Storm (West Virginia) east to the Virginia State Line. From Little North Mountain Alternative B turns south to connect with the same existing 500 kV transmission line (that Alternative A uses). However, Alternative B does not cross the existing 500 kV line (as Alternative A did), somewhat reducing overall impact. Alternative B then parallels the south side of the same existing 500 kV line as Alternative A to complete the remaining Virginia portion at the Meadowbrook Substation. Alternative E would follow the same existing 500 kV transmission line from Mount Storm (West Virginia) east to the Virginia State Line on the north side of the existing right of way. From Little North Mountain Alternative E would also turn south to connect with the same existing 500 kV transmission line to the south (similar to Alternatives A and B). Like Alternative B, Alternative E would not cross the existing 500 kV line (as Route A did), somewhat reducing overall impact. Alternative E

then parallels the north side of the same existing 500 kV line as to complete the remaining Virginia portion at the Meadowbrook Substation. Alternative E would require the reconfiguration of the Meadowbrook Substation.

Trailco is a partner with Dominion Virginia Power Company in building an additional 65-mile segment to Loudoun County. The route would go through Frederick, Warren, Fauquier, Rappahannock, Culpeper, Prince William, and Loudoun Counties. The applicants have indicated that an alternate route would use Interstate Route 66 right-of-way from Warren County to Loudoun County. According to the application (pages 51-54), alternatives number one through twelve were considered and rejected. The applicants have indicated that an alternate route would use Interstate Route 66 right-of-way from Warren County to Loudoun County. This segment, applied for under SCC Case No. PUE-2007-00031, is referred to in these Comments as the "Dominion - Trailco line" with additional specification of "Preferred Route" and "Alternate Route" as necessary. Dominion also considered two underground routes to the Preferred Route.

LIST OF PERMITS AND APPROVALS

The following permits and approvals are likely to be necessary as pre-requisites to project construction. Details on coordination relative to these requirements appear in the Regulatory and Coordination Needs section of these comments.

1. Water Permits. (See “Regulatory and Coordination Needs,” item 1, page 52).

(a) Section 404 permit under the Clean Water Act, issued by the U.S. Army Corps of Engineers for impacts to jurisdictional wetlands.

(b) Virginia Water Protection Permit (VWPP) pursuant to state VWPP regulations (9 VAC 25-210 *et seq.*) issued by DEQ for impacts to water and jurisdictional wetlands, including isolated wetlands.

2. Subaqueous Lands Management (see “Regulatory and Coordination Needs,” item 2, page 52).

Subaqueous Lands Encroachment Permit pursuant to *Virginia Code* section 28.2-1204, issued by the Virginia Marine Resources Commission for encroachments channelward of ordinary high water along natural rivers and streams.

3. Erosion & Sediment Control, and Stormwater Management Plans (see “Regulatory and Coordination Needs,” item 3 page 52).

(a) Erosion and Sediment Control Plans or annual specifications pursuant to the Erosion and Sediment Control Regulations, 4 VAC 50-30-30, 50-30-100, for activities involving land disturbance of 10,000 square feet or more (2,500 square feet or more in Chesapeake Bay Preservation Areas). Plans are subject to approval by the appropriate Watershed Office of the Department of Conservation and Recreation; annual specifications are subject to approval by that Department’s Division of Soil and Water Conservation.

(b) Stormwater Management Plans pursuant to the Stormwater Management Regulations, 4 VAC 3-20-10 *et seq.*, for activities involving land disturbance of 1 acre or more. Stormwater Management Plans are subject to approval by the appropriate Watershed Office of the Department of Conservation and Recreation or the appropriate local Soil and Water Conservation District.

4. Stormwater Construction Permit (see “Regulatory and Coordination Needs,” item 4 page 53).

Virginia Pollutant Discharge Elimination System General Permit for Stormwater Discharges associated with construction activities (9 VAC 25-180-10 *et seq.*) involving land disturbance of 1 acre or more (2,500 square feet or more in Chesapeake Bay Preservation Areas). Coverage under this general permit is approved by the Department of Conservation and Recreation’s Division of Soil and Water Conservation.

5. Air Quality Permits or Approvals (see “Regulatory and Coordination Needs,” item 5, page 53).

(a) Open Burning Permits. For open burning of land-clearing debris or other debris, pursuant to the Regulations for the Control and Abatement of Air Pollution (9 VAC 5-40-5600 *et seq.*)

(b) Permits to construct and operate fuel-burning equipment used in construction, pursuant to the Regulations cited above (9 VAC 5-80-10 *et seq.* for stationary sources, 9 VAC 5-80-2000 *et seq.* for new and modified sources in non-attainment areas).

6. Solid and Hazardous Waste Management (see “Regulatory and Coordination Needs,” item 6, pages 53 and 54).

(a) Applicable state laws and regulations include:

- Virginia Waste Management Act (Code of Virginia Section 10.1-1400 *et. seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); and
- Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110).

(b) Applicable Federal laws and regulations include:

- U.S. Department of Transportation Rules for Transportation of Hazardous materials (49 CFR Part 107).

7. Chesapeake Bay Preservation Areas (see “Regulatory and Coordination Needs,” item 7, page 54).

Construction within Chesapeake Bay Preservation Areas in Prince William County (Resource Management Areas (RMAs) and Resource Protection Areas

(RPAs)) must meet requirements of the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-10 *et seq.*) as locally administered.

8. **Protected Species Legislation** (see “Regulatory and Coordination Needs,” item 8, page 54).

The Federal Endangered Species Act (16 U.S.C. sections 1531 *et seq.*), and Virginia protected species legislation (Virginia Code §29.1-563 *et seq.*) may apply if there is any taking of protected species.

9. **National Historic Preservation Act** (see “Regulatory and Coordination Needs,” item 9, page 54).

Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation at 36 CFR Part 800 require that proponents and federal licensing agencies for federally licensed and permitted projects consider project effects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 will apply if there are any federal involvements, such as the issuance Section 404 Clean Water Act permits, including Nationwide General permits, by the U.S. Army Corps of Engineers.

10. **Federal Coastal Zone Management Act** (see “Regulatory and Coordination Needs,” item 10, page 54).

Segments of this project located in Prince William County must be consistent with the enforceable policies of the Virginia Coastal Resources Management Program, pursuant to the federal Coastal Zone Management Act of 1972, as amended, and its implementing federal consistency regulations (15 CFR Part 930, Sub-part D) and the Virginia Coastal Resources Management Program.

SUMMARY OF RECOMMENDATIONS

Based on the information and analysis submitted by reviewing agencies, we have a number of recommendations for consideration by the SCC in its deliberations on the Certificate of Public Convenience and Necessity under consideration for this project. These recommendations are in addition to the requirements of federal, state or local laws or regulations listed above. The rationale for these recommendations is discussed in the remainder of these comments, specifically in the “Environmental Impacts and Mitigation” section. A summary of recommendations follows.

Main Recommendations

Several reviewers have indicated that if the “no build” alternative is not feasible and the CPCN will be granted by the SCC, the Alternate (I-66) Route is preferred from the environmental perspective for the Meadow Brook to Loudoun line (PUE-2007-0031).

This Route is recommended by the DEQ’s Office of Wetland and Water Protection (DEQ-OWWP), Department of Conservation and Recreation (DCR), Department of Game and Inland Fisheries (DGIF), and Virginia Marine Resources Commission (VMRC). In general, based on comments from reviewers, this alternative will result in less impact on wetlands, streams, natural heritage resources, wildlife, forests, and open land. Accordingly, DEQ, DGIF, DCR, and VMRC recommend that this alternative be selected instead of the Applicants’ proposed route, Alternative 1.

In the event that this Alternate (I-66) Route (requiring the use of existing Virginia Department of Transportation (VDOT) right-of-way) is selected, DEQ recommends that the Applicants coordinate closely during the planning phase of the project with (i) VDOT to prevent potential conflicts with I-66 long-range widening plans; and (ii) the Department of Historic Resources (DHR) in order to avoid, minimize, and mitigate any potential adverse impacts to cultural resources.

Several reviewers have recommended that Alternative B be selected for the Trailco line (PUE-2007-00033). These reviewers include DEQ-OWWP, DCR, DGIF, VMRC and DHR. Reviewing agencies indicated that Alternative B would have less impact on natural and cultural resources than Alternative A and E discussed in the application.

Additional Recommendations

If the SCC decides to grant the CPCN, irrespective of the alternative selected, we offer the following recommendations which are not listed in any order of priority:

- Follow DEQ’s recommendations to avoid wetlands and streams, and minimize indirect and temporary impacts to wetlands (Environmental Impacts and Mitigation, item 1, pages 11 - 12).

- Follow the recommendations of DCR's Division of Chesapeake Bay Local Assistance and Prince William County to minimize the impacts of the project on Resource Protection Areas (Environmental Impacts and Mitigation, item 4, pages 14 and 15).
- Take precautions to limit emissions of volatile organic compounds and oxides of nitrogen when working in ozone non-attainment areas (Environmental Impacts and Mitigation, item 5, page 16).
- Conduct an environmental investigation that includes a search of waste-related databases to identify any solid or hazardous waste sites or issues on and around the property before work begins (Environmental Impacts and Mitigation, item 6, page 17).
- Reduce solid waste at the source, re-use it, and recycle it to the maximum extent practicable (Environmental Impacts and Mitigation, item 6, page 18).
- Follow recommendations of the Department of Conservation and Recreation and Department of Historic Resources in order to minimize the impacts of the project on the Appalachian National Scenic Trail (Environmental Impacts and Mitigation, item 7, pages 26, 27 and item 11, page 42).
- Coordinate this project with the Department of Conservation and Recreation and follow the recommendations of that Department regarding the protection of designated scenic rivers and trails, natural heritage resources and avoidance of natural area preserves (Environmental Impacts and Mitigation, item 7, pages 28 to 29).
- Coordinate this project with the Department of Game and Inland Fisheries with respect to impacts to wildlife and protected species, and follow the recommendations of that Department (Environmental Impacts and Mitigation, item 8, pages 34 to 35).
- Protect trees that are not identified for removal from the adverse effects of construction activities to the extent practicable (Environmental Impacts and Mitigation, item 9, page 35).
- Coordinate with the Department of Historic Resources regarding archaeological and architectural surveys necessary to determine the full extent of the impacts of the selected route on historic properties and to develop measures for the avoidance, minimization, or mitigation of adverse effects, regardless of which route is selected. (Environmental Impacts and Mitigation, item 11, pages 42 and 44).

- Coordinate road and transportation impacts with the affected Counties and the appropriate VDOT District and Residency Offices (Environmental Impacts and Mitigation, item 12, page 44, Regulatory and Coordination Needs, Item 11, page 54).
- Follow the principles and practices of pollution prevention to the maximum extent practicable (Environmental Impacts and Mitigation, item 13, pages 44-45).
- Limit the use of pesticides and herbicides to the extent practicable (Environmental Impacts and Mitigation, item 14, pages 44 and 45).
- Follow the requirements of the Federal Aviation Regulations by notifying the Federal Aviation Administration about the construction of the proposed transmission line (Environmental Impacts and Mitigation, item 15, page 45).
- Work with local officials to address local concerns related to the proposed power line (Environmental Impacts and Mitigation, item 16, pages 45 to 51).

ENVIRONMENTAL IMPACTS AND MITIGATION

1. Water Quality and Wetlands.

I. Virginia Electric and Power Company and Trans-Allegheny Interstate Line Company, Northwest Virginia 500 kV Transmission Line, Case No. PUE-2007-00031

DEQ's Office of Wetlands and Water Protection (OWWP) completed its review (May 18, 2007 for the Meadowbrook to Loudoun Line and July 23, 2007 for the Trailco Line) of the wetland impact consultation in accordance with the DEQ/SCC *Memorandum of Agreement Regarding Wetlands Impact Consultation* (July 2003). According to the report prepared by Burns and McDonnell (March 14, 2007), the proposed route (Alternative 1), which follows the existing transmission lines for 81 miles, will cross 78.1 acres of wetlands and 136 streams while the I-66 Route, which is proposed inside the right-of-way along Interstate Highway 66 for 53.3 miles, will cross 25.6 acres of wetlands and 84 streams. The analysis used a full 150 foot right-of-way for each route. The report further states that the streams would be spanned by the lines and no structures would be placed in surface waters. Based on the information provided in the application, DEQ-OWWP recommends the alignment of the alternate route.

II. Trans-Allegheny Interstate Line Company, Northwest Virginia 500 kV Transmission Line, Case No. PUE-2007-00033 (Trailco Line)

In response to a DEQ-OWWP June 15, 2007 request for additional information, Trailco (through Hunton and Williams) provided supplemental information prepared by The Louis Berger Group, Inc., which reevaluated the information to determine the vegetative character of each potential wetland area. According to the information provided, 0.2 acres of forested and emergent wetlands have a high probability of being affected by Alternatives A and E while 0.0 acres of forested and emergent wetlands have a high probability of being affected by Alternative B. Based on the supplemental information, DEQ-OWWP recommends the alignment of Alternative B.

Applicability of Virginia Water Protection Permit

DEQ-OWWP identified that the following permits may be required for the power line project:

- If the project qualifies for a Nationwide Permit 12 (NWP 12) from the U.S. Army Corps of Engineers (Corps) and if the impacts to streams are less than 1,500 linear feet then no Virginia Water Protection Permit (VWPP) is necessary.
- If (a) stream impacts exceed the thresholds outlined above, or (b) the project proposes to permanently impact more than one-half (1/2) acre of wetlands, or (c) the project does not qualify for a NWP 12 from the Corps, then a VWPP will be required from DEQ.

DEQ – NVRO will review the permit applications for portions of the line within its jurisdiction (Culpeper, Fauquier, Loudoun, Prince William, and Rappahannock Counties). DEQ – VRO will review the permit applications for portions of the line within its jurisdiction (Frederick and Warren Counties).

Recommendations

In general, DEQ recommends compliance with the 404(b)(1) guidelines of the Clean Water Act and with the Commonwealth's wetland mitigation policies. Both Federal and State guidelines recommend avoidance and minimization of wetland impacts as the first steps in the mitigation process. Any unavoidable impacts to State water may require compensation such as wetland creation, restoration or other acceptable forms of wetland compensatory mitigation.

Based upon the DEQ-OWWP review, we offer the following recommendations:

- Select the Alternate (I-66) Route for the Virginia Electric and Power Company and Trans-Allegheny Interstate Line Company Meadow Brook to Loudoun 500 kV Transmission Line (PUE-2007-00031).
- Select Alternative B for the Trans-Allegheny Interstate Line Company, Northwest Virginia 500 kV Transmission Line (PUE-2007-00033).
- Prior to commencing project work, all wetlands and streams within the project corridor should be field delineated and verified by the Corps using accepted methods and procedures.
- Wetland and stream impacts should be avoided and minimized to the maximum extent practicable.
- At a minimum, compensation for impacts to State waters, if necessary, shall be in accordance with all applicable state wetland regulations and wetland permit requirements, including the compensation for permanent conversion of forested wetlands to emergent wetlands.
- Any temporary impacts to surface waters associated with this project shall require restoration to pre-existing conditions.
- No activity may substantially disrupt the movement of aquatic life indigenous to the water body, including those species, which normally migrate through the area, unless the primary purpose of the activity is to impound water. Culverts placed in streams must be installed to maintain low flow conditions. No activity may cause more than minimal adverse effect on navigation. Furthermore, the activity must not impede the passage of normal or expected high flows and the structure or discharge must withstand expected high flows.
- Erosion and sedimentation controls shall be designed in accordance with the *Virginia Erosion and Sediment Control Handbook, Third Edition, 1992*. These controls shall be in place prior to clearing and grading and maintained in good working order to minimize impacts to state waters. These controls shall remain in place until the area is stabilized and shall then be removed. Any exposed slopes and streambanks shall be stabilized immediately upon completion of work in each permitted area. All denuded areas shall be properly stabilized in

accordance with the *Virginia Erosion and Sediment Control Handbook, Third Edition, 1992*.

- No machinery may enter surface waters, unless authorized by a Virginia Water Protection (VWP) permit.
- Heavy equipment in temporarily impacted surface waters shall be placed on mats, geotextile fabric, or other suitable material, to minimize soil disturbance to the maximum extent practicable. Equipment and materials shall be removed immediately upon completion of work.
- Activities shall be conducted in accordance with any Time-of-Year restriction(s) as recommended by the Department of Game and Inland Fisheries, the Department of Conservation and Recreation, or the Virginia Marine Resources Commission. The permittee shall retain a copy of the agency correspondence concerning the Time-of-Year restriction(s), or the lack thereof, for the duration of the construction phase of the project.
- All construction, construction access, and demolition activities associated with this project shall be accomplished in a manner that minimizes construction materials or waste materials from entering surface waters, unless authorized by a permit. Wet, excess, or waste concrete shall be prohibited from entering surface waters.
- Herbicides used in or around any surface water shall be approved for aquatic use by the United States Environmental Protection Agency (EPA) or the U.S. Fish & Wildlife Service. These herbicides should be applied according to label directions by a licensed herbicide applicator. A non-petroleum based surfactant shall be used in or around any surface waters.

Should you have any questions, please contact David Davis, DEQ -- OWWP, at dldavis@deq.virginia.gov or (804) 698-4105, Thomas Faha, DEQ -- NVRO, at (703) 583-3846, or Keith Fowler of the DEQ -- VRO (telephone (540) 574-7812) to inquire about potential water permitting requirements.

2. Subaqueous Lands Impacts.

Pursuant to Section 28.2-1204 of the Code of Virginia, Virginia Marine Resources Commission (VMRC) has jurisdiction over encroachments in, on, or over any State-owned rivers, streams, or creeks in the Commonwealth. The construction of any new electrical transmission lines over State-owned subaqueous lands, even within existing right-of-ways, will require the submission of a Joint Permit Application (JPA). All tidal crossings and any non-tidal crossings with drainage areas in excess of five square miles or flow rates of greater than five cubic feet per second (cfs) require authorization from VMRC. The application process will include a public interest review before any authorization is finalized. Typically, these types of projects have minimal long term environmental impacts to State-owned subaqueous lands. However, methods of construction may warrant special permit conditions.

VMRC's Recommendations

In general, the Marine Resources Commission supports alternatives with the minimum impacts on streams, wetlands, and aquatic resources. Therefore, VMRC recommends that the Applicants:

- Select Alternate (I-66) Route for the, Virginia Electric and Power Company and Trans-Allegheny Interstate Line Company Meadow Brook to Loudoun 500 kV Transmission Line (PUE-2007-00031).
- Select Alternative B for the Trans-Allegheny Interstate Line Company , Northwest Virginia 500 kV Transmission Line (PUE-2007-00033).

For more information, contact VMRC, Elizabeth Gallup at (757) 247-2200.

3. Erosion & Sediment Control, and Stormwater Management.

According to DCR's Division of Soil and Water Conservation's (DCR – DSWC) General Erosion and Sediment Control Specifications, electric, natural gas and telephone utility companies that undertake land-disturbing activities of 10,000 square feet or more (2,500 square feet or more in Prince William County, a Chesapeake Bay Protection Area locality) for construction, installation, and maintenance of lines (including essential support activities within and outside the easement, such as substations, staging areas, access roads, and borrow/spill areas, etc.) must file general erosion and sediment control (ESC) specifications annually with DCR – DSWC for review and approval in accordance with Section 10.1-563D of the Virginia Erosion and Sediment Control Law (VESCL). All regulated activities must comply with the ESC specifications, whether work is undertaken on company property or an easement (including VDOT right of way) owned by another party. Construction of company buildings, facilities, and other structures are not regulated at Section 10.1-563D, and therefore, must comply with the requirements of the appropriate local ESC Program.

The applicants must comply with their general erosion and sediment control (ESC) specifications approved by DCR – DSWC in accordance with Section 10.1-563D of the VESC Law ("regulated activities") undertaken in 2007. All regulated activities must comply with the ESC specifications, whether work is undertaken on company property or an easement (including VDOT right of way) owned by another party. Dominion must have a certified Responsible Land disturber to conduct any regulated activity. The applicants must contact linear_projects@dcr.virginia.gov two weeks prior to starting construction. Construction of company buildings, facilities, and other structures are not regulated at Section 10.1-563D, and therefore, must comply with the requirements of the appropriate local ESC Program. Note that depending on local requirements, a separate stormwater management (SWM) plan may also be required. The applicants should contact the appropriate local official to request local ESC and SWM program requirements. The applicant should contact the appropriate DCR – Regional Watershed Office for guidance.

DCR-DSWC is responsible for the issuance, denial, revocation, termination and enforcement of Virginia Pollutant Discharge Elimination System (VPDES) permits for the control of stormwater discharges from land disturbing activities under the Virginia Stormwater Management Program. Therefore, for projects involving land disturbing activities of 1 acre or more (2,500 square feet or more in Prince William County, a Chesapeake Bay Protection Area locality), the applicants or their authorized agent are required to apply for registration coverage under the General Permit for Discharges of Stormwater from Construction Activities. General information and registration forms for the General Permit are available on DCR's website at:

<http://www.dcr.virginia.gov/sw/vsmp.htm#geninfo>.

Additional information regarding the Stormwater Management Program requirements may be directed to Holly Sepety, DCR, (telephone (804) 225-2613). [Reference: Virginia Erosion and Sediment Control Law §10.1-563D; Virginia Erosion and Sediment Control Regulations §4VAC50-30-30; Virginia Stormwater Management Law §10.1-603.3; Virginia Stormwater Management Regulations §4VAC-3-20-90 - 141]

4. Chesapeake Bay Preservation Areas.

DCR's Division of Chesapeake Bay Local Assistance (DCBLA) noted in its review that electric transmission lines are *conditionally* exempt from the *Chesapeake Bay Preservation Area Designation and Management Regulations* as outlined under 9 VAC 10-20-150 B. The exemption for these utilities is conditioned under 9 VAC 10-20-150 B1 of the regulations as follows:

Construction, installation, operation, and maintenance of electric, natural gas, fiber-optic, and telephone transmission lines, railroads, and public roads and their appurtenant structures in accordance with:

- (i) regulations promulgated pursuant to the Erosion and Sediment Control Law (§ 10.1-560 *et seq.* of the Code of Virginia) and the Virginia Stormwater Management Act (§ 10.1-603.1 *et seq.* of the Code of Virginia);
- (ii) an erosion and sediment control plan and a stormwater management plan approved by the Virginia Department of Conservation and Recreation; or
- (iii) local water quality protection criteria at least as stringent as the above state requirements will be deemed to constitute compliance with this chapter.

Prince William County has designated its entire jurisdiction as a Chesapeake Bay Preservation Area. According to Prince William County, the construction of both the Proposed and Alternate Transmission lines will cross numerous perennial streams within the County's jurisdiction. As stated in the Dominion application *Section I- Chesapeake Bay Preservation Areas*, "[c]onstruction, installation, operation and maintenance of electric transmission lines are exempt from the Chesapeake Bay Preservation Act as stated in the exemption for public utilities, railroads, public roads

and facilities in 9 VAC 10-20-150.” However, this disturbance should be minimized wherever possible by using the alignment and best available technology to reduce any disturbance to the natural wooded buffer in the Resource Protection Area (RPA) along perennial streams.

Various locations along the Proposed Route Transmission Line through the County will cross perennial streams and their associated 100-foot RPA buffers. Transmission line stream crossings are shown at Cedar Run, Cedar Creek, Slate Run, South Run, Kettle Run, Rocky Branch, Little Bull Run and Lick Branch. These transmission line crossings may require disturbance of the 100-foot wooded buffer on both sides of the stream to install supports or to maintain vegetation in this utility corridor. Minimization of RPA disturbance in this corridor is needed, although the placement of the proposed line adjacent to the existing 500 kV transmission does appear to impact less contiguous streamside forest.

Numerous locations along the Alternate Route Transmission Line through the County will also cross perennial streams and their associated 100-foot RPA buffers. Transmission line stream crossings are shown at Catlett Branch, North Fork -Broad Run, Young’s Branch and other unnamed tributary stream crossings. These transmission line crossings will require disturbance of the 100-foot wooded buffer on both sides of the stream to install supports or to maintain vegetation in this utility corridor. As these transmission line crossings will be in areas where no transmission line or easements exist, additional disturbance is anticipated through the RPA for the Alternate Route and minimization of this disturbance should be emphasized.

As noted in response letters from Virginia Department of Conservation and Recreation, erosion and sediment controls installed with this transmission line project should be carefully maintained and two layer controls or barrier controls such as super silt fencing should be used in sensitive areas including stream crossings. As Prince William County is a Chesapeake Bay locality, the threshold for requiring an erosion and sediment control plan is total land disturbance exceeding 2,500 square feet (sf).

Recommendations:

- Minimize disturbance to the natural wooded buffer in the Resource Protection Areas along perennial streams in Prince William County wherever possible.
- Prepare an erosion and sediment control plan if the total land disturbance exceeds 2,500 square feet.
- Maintain erosion and sediment controls installed and use two layer controls or barrier controls such as super silt fencing in sensitive areas including stream crossings.

Should you have any questions about any of the above comments, please contact Kevin P. Black, Assistant Prince William County Attorney (telephone (703) 792-6620) or Alice Baird, DCR’s Division of Chesapeake Bay Local Assistance at (804) 225-2307.

5. Air Quality.

5(a) Ozone Non-attainment Area.

DEQ notes that the Counties of Frederick, Loudoun, and Prince William Counties are designated areas of ozone (O₃) non-attainment. Therefore, when working in these areas the applicants should take all reasonable precautions to limit emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), principally by controlling or limiting the burning of fossil fuels. DEQ suggests using, to the maximum extent practicable, modern low NO_x-emitting on- and off-road construction equipment.

5(b) Fugitive Dust Control.

During construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the *Regulations for the Control and Abatement of Air Pollution*. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

5(c) Open Burning.

If project activities include the burning of construction or demolition material, these activities must meet the requirements under 9 VAC 5-40-5600 *et seq.*, for open burning. Whereas, the regulation provides for, but does not require, the local adoption of a model ordinance concerning open burning, the applicant should contact the appropriate local official to determine what local requirements, if any, exist. Some applicable provisions of the regulation include, but are not limited to:

- All reasonable effort shall be made to minimize the amount of material burned, with the number and size of the debris piles;
- The material to be burned shall consist of brush, stumps and similar debris waste and clean burning demolition material;
- The burning shall be at least 500 feet from any occupied building unless the occupants have given prior permission, other than a building located on the property on which the burning is conducted;
- The burning shall be conducted at the greatest distance practicable from highways and air fields,
- The burning shall be attended at all times and conducted to ensure the best possible combustion with a minimum of smoke being produced;

- The burning shall not be allowed to smolder beyond the minimum period of time necessary for the destruction of the materials; and
- The burning shall be conducted only when the prevailing winds are away from any city, town or built-up area.

5(d) Fuel Burning Equipment.

Also, a permit may be required for fuel-burning equipment, depending on the type and size of the equipment. See Regulatory and Coordination Needs, Item 5. *Air Quality Regulation*.

Should you have any questions, contact Terry Darton in DEQ's Northern Virginia Regional Office (telephone (703) 583-3845) for portions of the line within NVRO's jurisdiction (Culpeper, Fauquier, Loudoun, Prince William, and Rappahannock Counties), and Ron Phillips in DEQ's Valley Regional Office (telephone (540) 574-7800) portions of the line within its jurisdiction (Frederick and Warren Counties).

6. Solid and Hazardous Waste Management.

6(a) General Comments.

DEQ's Office of Remedial Programs (DEQ – ORP) stated that, the path of the proposed transmission line is extensive. For each area along the line where any work is to take place, the applicant needs to conduct an environmental investigation on and near the property to identify any solid or hazardous waste sites or issues before work can commence.

6(b) Database Searches.

This investigation should include a search of appropriate waste-related databases. The DEQ – ORP notes that the following databases have been included in a search prior to the submittal of this document:

- Federal CERCLIS
- Federal CORRACTS
- EPA RCRA Info
- DEQ's Solid Waste Management Facilities/Landfill Sites (SWF/LF)
- DEQ's Voluntary Remediation Program (VRP)

DEQ-ORP has provided information (attached) for the applicants use in accessing DEQ databases (see attached comments on waste information).

6(c) Contaminated Soils.

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and

regulations. Hazardous material located on site should be handled according to the hazardous waste regulations listed above (*List of Permits or Approvals Required*, page 4, section 6).

6(d) Asbestos-containing Materials and Lead-based Paint.

Also, If applicable, structures to be demolished should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed.

6(e) Pollution Prevention Principals.

DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. For example, all generation of hazardous wastes should be minimized and handled appropriately. See “Environmental Impacts and Mitigation,” item 13. *Pollution Prevention*, below.

Questions or requests for additional information may be directed to Paul Kohler at DEQ-ORP (telephone (804) 698-4208).

7. Natural Heritage and Recreational Resources.

7(a) Natural Heritage Resources.

The Department of Conservation and Recreation's Division of Natural Heritage (DCR – DNH) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations. DCR – DNH identified several conservation sites and natural heritage resources associated with each site that may be affected by the alternatives discussed in the EA. The following discussion summarizes DCR's detailed comments which are attached to our comments.

I. Virginia Electric and Power Company and Trans-Allegheny Interstate Line Company, Northwest Virginia 500 kV Transmission Line, Case No. PUE-2007-00031

i. Dominion Virginia Power Proposed Route (Alternative 1).

Conservation Sites and Associated Natural Heritage Resources.

According to the DCR – DNH Biotics Data System, this alternative route goes through the following conservation sites: ***Manassas Diabase Uplands, Northern Pond***

Mountains, and Crooked Run. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant.

Manassas Diabase Uplands Conservation Site

According to the DCR – DNH Biotics Data System, several rare plants typically associated with prairie vegetation inhabit semi-open diabase glades in Virginia may occur on site if suitable habitat is present. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flatrock, a hard, dark-colored volcanic rock, is found primarily in northern Virginia counties and is located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought-tolerant plants occurs. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction (Rawinski, 1995).

In Northern Virginia, diabase supports occurrences of several global and state rare plant species: earleaf foxglove (*Agalinis auriculata*, G3/S1/NL/NL), blue-hearts (*Buchnera americana*, G3G4/S1/NL/NL), purple milkweed (*Asclepias purpurascens*, G4G5/S2/NL/NL) downy phlox (*Phlox pilosa*, G5T5/S2/NL/NL), stiff goldenrod (*Oligoneuron rigidum* var. *rigidum*, G5/S2/NL/NL), and marsh hedgenettle (*Stachys pilosa* var. *arenicola*, G5/S1/NL/NL).

Northern Pond Mountains Conservation Site

The Northern Pond Mountains conservation site has been given a biodiversity significance ranking of B4, which represents a site of high significance. The natural heritage resource associated with this site is *Oak/Heath Forest* GNR/SNR/NL/NL.

Oak/Heath Forests

This group of oak-dominated forests is prominent on xeric, infertile upland sites in every physiographic province of Virginia, and is wide-ranging in the Appalachians and adjacent provinces outside of the Commonwealth. Regionally varying mixtures of white oak (*Quercus alba*), chestnut oak (*Quercus montana*, = *Quercus prinus*), scarlet oak (*Quercus coccinea*), black oak (*Quercus velutina*), northern red oak (*Quercus rubra*), southern red oak (*Quercus falcata*), and post oak (*Quercus stellata*) compose the overstories of these forests. Bigtooth aspen (*Populus grandidentata*) and pines – including pitch pine (*Pinus rigida*) in the mountains, shortleaf and Virginia pines (*Pinus echinata* and *Pinus virginiana*) in the Piedmont, and loblolly pine (*Pinus taeda*) in

the Coastal Plain – are common associates that usually indicate past disturbance. Hickories (*Carya* spp.) are generally unimportant and mostly restricted to the understory.

Crooked Run Conservation Site

The Crooked Run conservation site has been given a biodiversity significance ranking of B3, which represents a site of high significance. Significant caves have been documented within this conservation site and the natural heritage resources associated with this site are: *Antrolana lira* Madison Cave Isopod G2G4/S2/LT/LT, and *Stygobromus gracilipes* Shenandoah Valley Cave Amphipod G2G4/S2S3/NL/SC.

The *Madison Cave Isopod* is an extremely rare troglobitic species that typically inhabits cave lakes (Holsinger, 1991). Threats to the Madison Cave isopod include groundwater pollution and disruptive human activities. This species is currently listed as threatened by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Game and Inland Fisheries (DGIF). Due to the legal status of this natural heritage resource, DCR recommends coordination with DGIF and USFWS.

The *Shenandoah Valley Cave Amphipod* occurs in small streams and pools in caves (Holsinger, 1991). Threats to the Shenandoah Valley cave amphipod include urbanization and groundwater pollution. This species is currently classified as a special concern species by the DGIF.

Broad Run Stream Conservation Unit

The Broad Run Stream Conservation Unit is downstream from the Alternative Route I-66.

Stream Conservation Units (SCUs) identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. Stream Conservation Units are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Broad Run SCU has been given a biodiversity ranking of B5, which represents a site of high significance. The natural heritage resources associated with this site are: *Alasmidonta varicose* Brook floater (mussel) G3/S1/NL/LE, and *Elliptio lanceolata* Yellow lance (mussel) G2G3/S2S3/SOC/SC.

The *Brook Floater*, a small rare mussel species, typically occurs in and near riffles and rapids of smaller creeks with rocky or gravelly substrates. Threats include poor water quality as this species does not tolerate silt or nutrient pollution well (Stevenson and Bruenderman, 1995). This species is currently listed as endangered by the DGIF.

The *Yellow Lance Mussel* occurs in mid-sized rivers and second and third order streams. To survive, it needs a silt-free, stable streambed and well-oxygenated water

that is free of pollutants. In Virginia, the Yellow lance is currently known from populations in the Chowan, James, York, and Rappahannock river drainages. This species is currently classified as a special concern species by DGIF and a species of concern by USFWS; however, these designations have no official legal status.

Freshwater Mussels are dependent on good water quality, good physical habitat conditions, and an environment that will support populations of host fish species; hence are considered good indicators of the health of aquatic ecosystems (Williams et al., 1993). Because mussels are sedentary organisms, they are sensitive to water quality degradation related to increased sedimentation and pollution.

ii. Dominion Virginia Power Alternate (I-66) Route.

Conservation Sites and Associated Natural Heritage Resources.

According to the information currently in DCR – DNH files, this alternate route goes through the following conservation sites: ***Manassas Diabase Uplands, Crooked Run, Northern Pond Mountains, Broad Run Conservation Site and Southern Bull Run Mountains.*** See discussion above 7(a)i for information pertaining to Manassas Diabase Uplands, Crooked Run and Northern Pond Mountains conservation sites.

The *Broad Run Conservation Site* has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resource associated with this site is: *Geum laciniatum* var. *trichocarpum* Rough Avens G3G4/S2/NL/SC. This species occurs in open wetlands such as wet meadows (The Nature Conservancy, 1996). In Virginia, rough avens is currently known from ten locations, two of which are historic.

The *Southern Bull Run Mountains Conservation Site* has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resources associated with this site are: Pine-oak/Heath Woodland GNR/SNR/NL/NL, Mesic Mixed Hardwood Forest GNR/SNR/NL/NL, Mountain/Piedmont Acidic Cliff GNR/SNR/NL/NL, Oak/Heath Forest GNR/SNR/NL/NL, Mountain/Piedmont Acidic Seepage Swamp GNR/SNR/NL/NL, Basic Mesic Forest GNR/SNR/NL/NL, Basic Oak-Hickory Forest GNR/SNR/NL/NL, Low-elevation Boulderfield Forest/Woodland GNR/SNR/NL/NL, and *Cicindela patruela* Barrens Tiger Beetle G3/S2/NL/NL.

Pine-oak/Heath Woodlands. Communities in this group occur in the Appalachians from New York south to northern Georgia. Sites are typically located on convex, south to west facets of steep spur ridges, narrow rocky crests, and cliff tops. Pine – Oak / Heath woodlands are widespread throughout both the Ridge and Valley and Blue Ridge provinces in western Virginia. They occur at elevations from below 300 m (1,000 ft) to more than 1,200 m (4,000 ft) on various substrates, but most commonly on acidic, sedimentary and metasedimentary substrates, e.g., sandstone, quartzite, and shale. A few stands occur on Piedmont monadnocks and foothills. Soils are very infertile, shallow, and droughty. Thick, poorly decomposed duff layers, along with dead wood

and inflammable shrubs, contribute to a strongly fire-prone habitat. Short-statured table-mountain pine (*Pinus pungens*) and pitch pine (*Pinus rigida*) are usually the dominants forming an open overstory, often with co-dominant chestnut oak (*Quercus montana*, = *Quercus prinus*). Less important tree associates include scarlet oak (*Quercus coccinea*), Virginia pine (*Pinus virginiana*), and sassafras (*Sassafras albidum*). Except in the Piedmont stands, bear oak (*Quercus ilicifolia*) is characteristically abundant in the shrub layer, along with various ericaceous species. Colonial shrubs usually pre-empt available microhabitats for most herbaceous species, but bracken fern (*Pteridium aquilinum* var. *latiusculum*) and turkey-beard (*Xerophyllum asphodeloides*) are often competitive enough to achieve significant cover.

The globally rare variable sedge (*Carex polymorpha*), the state-rare northern pine snake (*Pituophis melanoleucus melanoleucus*) and several rare moths, all bear oak feeders, are locally associated with these woodlands. More common and conspicuous animals often found in these dry, rocky, semi-open habitats include the northern fence lizard (*Sceloporus undulatus hyacinthinus*) and the five-lined skink (*Eumeces fasciatus*).

Mesic Mixed Hardwood Forests. Forests in this group occupy mesic uplands, ravines, lower slopes, and well-drained "flatwoods" on acidic, relatively nutrient-poor soils. The most typical overstories contain mixtures of American beech (*Fagus grandifolia*), oaks (*Quercus* spp., varying by region), tulip-poplar (*Liriodendron tulipifera*), and hickories (*Carya* spp.), but a wide variety of hardwood associates occur. American hornbeam (*Carpinus caroliniana* ssp. *caroliniana* and ssp. *virginiana*), flowering dogwood (*Cornus florida*), American strawberry-bush (*Euonymus americanus*) and, in eastern Virginia, American holly (*Ilex opaca* var. *opaca*) are prominent understory plants. Although mesic mixed hardwood forests still cover sizeable areas east of the mountains in Virginia, their extent and compositional integrity have been reduced by repeated logging. Several distinct community types are represented in this widespread group.

Mountain/Piedmont Acidic Cliffs. This group contains sparse woodland, scrub, and herbaceous vegetation of very steep to precipitous sandstone, acidic shale, and quartzite outcrops, cliffs, and rocky escarpments. These communities are scattered throughout the mountain and western Piedmont foothill regions of Virginia, but are poorly inventoried and documented at present. The vegetation is generally dominated by lichens, with the umbilicate "rock tripe" species of *Umbilicaria* and *Lasallia* especially prominent. Vascular plants are confined to crevices and humus-covered shelves. On drier, south- to west-facing cliffs, vascular species may be very sparse and consist of stunted pines (*Pinus virginiana*, *Pinus pungens*, and/or *Pinus rigida*) ericaceous shrubs, and occasional herbaceous lithophytes such as mountain spleenwort (*Asplenium montanum*), silverling (*Paronychia argyrocoma*), and wild bleeding heart (*Dicentra eximia*). Sheltered, north- to east-facing cliffs often support more diverse shrub and herbaceous flora. Characteristic species include stunted eastern hemlock (*Tsuga canadensis*), evergreen rhododendrons (*Rhododendron maximum* and *Rhododendron catawbiense*), rock polypodies (*Polypodium appalachianum* and *Polypodium virginianum*), Michaux's saxifrage (*Saxifraga michauxii*), rock alumroot (*Heuchera villosa* var. *villosa*), and wavy hairgrass (*Deschampsia flexuosa* var.

flexuosa). Shaded grottoes and “rock houses” on cliffs of the Cumberland Mountains in southwestern Virginia support colonies of little-leaved alumroot (*Heuchera parviflora* var. *parviflora*) and round-leaved catchfly (*Silene rotundifolia*). There are few threats to acidic cliffs, except for local damage by rock climbers.

Oak/Heath Forests. See above comments under the Manassas Diabase Uplands.

Mountain/Piedmont Acidic Seepage Swamp. These saturated deciduous forests occupy gently sloping stream headwaters, large spring seeps, and ravine bottoms underlain by sandstone, quartzite, or base-poor granitic rocks. These communities are locally scattered throughout the Virginia mountains and western Piedmont, up to about 900 m (3,000 ft) elevation. Hummock-and-hollow microtopography, braided streams, areas of coarse gravel and cobble deposition, muck-filled depressions, and abundant *Sphagnum* mats are typical habitat features. Soils are very strongly to extremely acidic, with low base status. Hydrologically, these habitats are classified as “groundwater slope wetlands,” where seepage discharged at the ground surface is drained away as stream flow. They differ from certain basin wetlands that are saturated strictly by perched groundwater and support somewhat similar vegetation.

Basic Mesic Forests communities occur on deep, well-drained, basic or circumneutral soils on lower slopes, north-facing slopes, and ravines in the Piedmont and Coastal Plain regions (Schafale and Weakley, 1990). The canopy tends to be a mixture of mesophytic trees such as American beech (*Fagus grandifolia*), southern sugar maple (*Acer barbatum*), white ash (*Fraxinus americana*), tulip tree (*Liriodendron tulipifera*), and oak (*Quercus* spp.). Understory trees may include hop hornbeam (*Ostrya virginiana*), eastern redbud (*Cercis canadensis*), and paw-paw (*Abimina triloba*). The shrub layer is typically well developed. The herb layer is dense and very diverse with black bugbane (*Cimicifuga racemosa*), beggar lice (*Desmodium pauciflorum*), horse-blam (*Collinsonia canadensis*), common eastern brome grass (*Bromus pubescens*), and many other species often represented (Van Alstine et al, 1999). Basic mesic forest communities are threatened by logging, invasion by exotic species, and infestations of the gypsy moth.

Basic Oak-Hickory Forests. Oak-hickory woodland/savanna (basic subtype) communities, now considered a globally rare community type, occur on dark, mafic, magnesium or calcium-rich soils in the Piedmont region. This community type is characterized by an open-canopied tree cover with a sparse shrub layer and a dense herbaceous layer rich in legumes including *Desmodium* and *Lespedeza* species. Dominant trees include various oaks (*Quercus*) and hickories (*Carya*), and red cedar (*Juniperus virginianus*). Requiring frequent fire to maintain its composition, a major threat to the basic type oak-hickory woodland/savanna community is fire suppression. Other threats include logging and development (The Nature Conservancy, 1996)

Low-elevation Boulderfield Forest/Woodlands. This group contains open forests and woodlands occupying relatively unweathered boulderfields at elevations below 975 m

(3,200 ft). Low-Elevation Boulderfield Forests and Woodlands are known from the northern and central Appalachian regions, extending from Vermont and New Hampshire south to Virginia and West Virginia. In Virginia, these communities are widely scattered throughout the mountains on steep side slopes of ridges, often in zones below large outcrops. They are also common along the Virginia side of the Potomac River Gorge between Washington, D.C., and Great Falls, and locally upstream. Stand composition varies greatly with substrate, aspect, and slope position. Sweet birch (*Betula lenta*) is usually the sole woody invader of large-block sandstone and quartzite boulderfields, forming pure stands of gnarled, spreading trees. Here, Virginia creeper (*Parthenocissus quinquefolia*) is sometimes the only low-growing plant able to become established in the deep interstices between boulders. On somewhat more weathered or less blocky boulderfields, chestnut oak (*Quercus montana*, =*Quercus prinus*) or mixtures of chestnut oak, northern red oak (*Quercus rubra*), blackgum (*Nyssa sylvatica*), and sweet birch, along with a greater diversity of shrubs and herbs, may prevail. Cool, north-facing, sandstone/quartzite boulderfields frequently support some eastern hemlock (*Tsuga canadensis*) and, locally, disjunct populations of paper birch (*Betula cordifolia*, = *Betula papyrifera* var. *cordifolia*).

Communities in this group are uncommon in Virginia; their classification and distributional status need further assessment. They are floristically distinguished from communities of the High-Elevation Boulderfield Forests and Woodlands group by the preponderance of widely distributed plants and the near-absence of elevation-limited northern and Southern Appalachian species (Fleming et al., 2006).

Bull Run Mountains Natural Area Preserve

Bull Run Mountains Natural Area Preserve occupies a series of rocky ridges and steep valleys on Virginia's northern piedmont. Straddling Fauquier and Prince William Counties, the preserve's 2,486 acres are owned by the Virginia Outdoors Foundation, a state-supported organization dedicated to protecting open space across the Commonwealth. The preserve harbors outstanding examples of several forest and woodland community types, including some that are rare in Virginia. Other interesting communities occupy white quartzite cliffs and the boulder fields beneath them on High Point Mountain near the southern end of the preserve. The site was dedicated as a Natural Area Preserve in 2002.

In addition, the Broad Run SCU is downstream of this proposed alternate route (see above comments under Alternate Route 1).

iii. Underground Alternative to Dominion Virginia Power Route (Alternative 1).

According to the information currently in DCR – DNH files, this alternative route goes through the *Manassas Diabase Uplands* and *Northern Pond* conservation sites. In addition, the *Broad Run SCU* and the *Rappahannock River-Carter Run SCU* are located downstream from the proposed route.

Broad Run Stream Conservation Unit. See above comments under *Dominion Virginia Power Route (Alternative 1)*.

Rappahannock River-Carter Run Stream Conservation Unit has been ranked as a B2 conservation site, which indicates it is of very high significance. The natural heritage resources associated with this site are: *Elliptio lanceolata* Yellow lance (mussel) G2G3/S2S3/NF/SC, and *Lasmigona subviridis* Green floater (mussel) G3/S2/NF/LT. For Yellow lance information, see comments above.

The *Green floater* is a rare freshwater mussel, ranges from New York to North Carolina in the Atlantic Slope drainages, as well as the New and Kanawha River systems in Virginia and West Virginia. This species has been listed as state threatened by the DGIF.

iv. Remington -- Underground Alternate to Route (Alternative 1).

According to the information currently in DCR – DNH files, this alternate route goes through the following conservation sites: *Manassas Diabase Uplands*, *Nokesville Diabase*, *Crooked Run*, *Vulcan Gainesville Tract*, *Carriage Ford*, *Rappahannock River-Carter Run SCU*, *Rappahannock River Thumb Run SCU*, and the *Rappahannock River-Mountain Run SCU*. For Manassas Diabase Uplands and Crooked Run, see above comments under *Dominion Virginia Power Route (Alternative 1)*.

Nokesville Diabase Conservation Site

According to the information currently in DCR – DNH files, several rare plants typically associated with prairie vegetation (inhabit semi-open diabase glades in Virginia) may occur on site if suitable habitat is present. In Northern Virginia, diabase supports occurrences of several global and state rare plant species: earleaf foxglove (*Agalinis auriculata*, G3/S1/NL/NL), blue-hearts (*Buchnera americana*, G3G4/S1/NL/NL), purple milkweed (*Asclepias purpurascens*, G4G5/S2/NL/NL) downy phlox (*Phlox pilosa*, G5T5/S2/NL/NL), stiff goldenrod (*Oligoneuron rigidum* var. *rigidum*, G5/S2/NL/NL), and marsh hedenetle (*Stachys pilosa* var. *arenicola*, G5/S1/NL/NL).

Vulcan Gainesville Tract Conservation Site

The Vulcan Gainesville Tract has been given a biodiversity ranking of B2, which represents a site of very high significance. The natural heritage resources associated with this site are: *Agalinis auriculata* Earleaf Foxglove G3/S1/NL/NL, *Oligoneuron rigidum* var. *rigidum*, Stiff Goldenrod G5T5/S2/NL/NL, *Piedmont Prairie*, GNR/SNR/NL/NL, and *Pycnanthemum torrei* Torrey's Mountain-mint G2/S2?/NL/NL.

Rappahannock River-Carter Run, Rappahannock River Thumb Run, and Rappahannock River- Mountain Run Stream Conservation Unit

According to the information currently in DCR – DNH files, the project area is located within the Rappahannock River-Carter Run Stream Conservation Unit, the

Rappahannock River-Thumb Run Stream Conservation Unit and the Rappahannock River Mountain Stream Conservation Site. These sites have been given a biodiversity ranking of B2, which represents a site of very high significance. The natural heritage resources associated with these sites are: *Elliptio lanceolata* Yellow lance G2G3/S2S3/SOC/SC, *Lasmigona subviridis* Green floater G3/S2/NL/LT. For Yellow lance information, see above.

In addition, this route crossed the Broad Run that has been designated by the DGIF as being "Threatened and Endangered Species Waters". The species associated with this T & E waters is *Alasmidonta varicose* (Brook floater).

7 (b) Recreational Resources

i. Designated Scenic Rivers, Scenic Byways and Trails.

The Department of Conservation and Recreation's Division of Planning and Recreation Resources (DCR – DPRR) has reviewed the project application and advises the applicant that Goose Creek was granted Scenic River designation this year, 2007 [Designated HB 2396 signed 4/5/07 by Governor effective July 1, 2007].

According to Fauquier County, scenic rivers and streams will be severely impacted by both proposals. Goose Creek is parallel to the alternate route and the line would be visible for miles from the creek. The Rappahannock River is parallel to Dominion's preferred route and crossed repeatedly by the line. In both instances, the scenic qualities of these water bodies will be damaged.

Fauquier County indicated that the Burns and McDonnell study shows that the alternate route crosses various State scenic byways eleven (11) times along the route. According to the County, the study does not show the number of miles of scenic byways which will be detrimentally affected by having the transmission line run parallel to them or within their view. The County stated that the destruction of the scenic quality of these byways will detrimentally affect tourism and the preservation of the natural history of Virginia.

ii. Appalachian National Scenic Trail.

DCR's Division of Planning and Recreational Resources has reviewed the proposal of Dominion to cross the Appalachian Trail with their proposed Meadow Brook to Loudoun 500 kV line. DCR is the state agency responsible for managing the Appalachian Trail in Virginia. (§10.1-203)

The setting of the Appalachian Trail is important to the quality of the experience of AT hikers. Sections of the AT that pass through natural, undisturbed environments provide hikers with a backcountry, or wilderness experience (the intended setting for the AT). However, when the AT passes through areas that are impacted by development, roads, utility crossings, or cell towers the wilderness setting is lost and the quality of the

experience is degraded. DCR is committed to working with the National Park Service, Appalachian Trail Conservancy, and the member clubs that maintain the trail to protect it from external impacts. Power line crossings are external impacts, especially when they approach the AT directly from both directions.

Recommendations

If the SCC determines that the proposed Meadow Brook to Loudoun Transmission project is necessary to meet public electrical needs, then DCR ask the SCC to require the following accommodations be made in an effort to minimize impacts to the Appalachian Trail and the experience that trail users enjoy while hiking on the trail.

- Cross where an existing crossing already exists - preferably another power line, but if not, then at a road crossing.
- Do not add additional towers to the existing line, move all wires on to one set of towers in the same corridor the current line uses.
- Use vegetation and terrain features to screen the cleared transmission line corridor when approaching and departing from the AT. The cleared right of way should not be a visible feature of the landscape when viewed from the Trail.
- Repair quickly any construction impacts of the project to the satisfaction of the National Park Service, the managing agency.

If there are residual impacts to the AT or the AT experience caused by this new transmission line, Dominion should mitigate those impacts through negotiation with the National Park Service, Appalachian Trail Conservancy and the Potomac Appalachian Trail Club.

7 (c) Threatened and Endangered Plant and Insect Species

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. According to DCR, the current activity will not affect any documented state-listed plants or insects. VDACS stated that it has no additional comments

7 (d) Karst Geologic Features, Caves

According to DCR, discharge of runoff to sinkholes or sinking streams, filling of sinkholes, and alteration of cave entrances can lead to surface collapse, flooding, erosion and sedimentation, groundwater contamination, and degradation of subterranean habitat for natural heritage resources. If the project involves filling or “improvement” of sinkholes or cave openings, DCR would like detailed location information and copies of the design specifications. In cases where sinkhole

improvement is for stormwater discharge, copies of VDOT Form EQ-120 will suffice. Coordinate with Wil Orndorff (telephone (540) 831-4056, email address: Wil.Orndorff@dcr.virginia.gov) for additional information regarding karst geology and to document and minimize adverse impacts, if karst features are encountered during the project.

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7 (e) Analysis and Findings

Protected Species and Habitat: The current activity will not affect any documented state-listed plant or insect species under the jurisdiction of the Department of Agriculture and Consumer Services.

According to the information currently in DCR's files, the Wood turtle (*Glyptemys insculpta*, G4/S2/NL/LT) has been documented in the project vicinity and may occur within the project limits if appropriate habitat is present.

In addition, the Furnace Run, Froman Run, Meadow Brook, Fall Run and Cedar Creek have been designated by the VDGIF as being "Threatened and Endangered Species Waters" and are within or downstream from all three alignments. The species associated with these T & E waters is Wood turtle.

Karst Geologic Features and Caves: All three alternatives are within or adjacent to a karst landscape characterized by sinkholes, caves, disappearing streams, and large springs.

Natural Areas and Preserves: DCR's files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

DCR's Recommendations for both Lines.

Overall, if a "no build" alternative is not feasible for this project, DCR staff prefers Alternate (I-66) Route for the Meadowbrook to Loudoun line (PUE-2007-00031) because it goes through existing power lines and along Route 66 that has already been impacted and the proposed Alternative B alignment for the Trailco line (PUE-2007-00033) due to fewer aquatic impacts compared to Alternatives A and E.

- Select an alternative that uses existing powerlines, easements and right of way; hence DCR's preference for the Alternate Route (I-66) (PUE 2007-00031).
- Select Alternative B due to fewer aquatic impacts (PUE-2007-00033)
- Avoid all documented natural heritage resources and protected areas.
- Avoid impacting the Bull Run Mountains National Preserve Area.
- Inventory all areas of the line intersecting consites for rarities known from these sites, due to the potential for these sites to support additional populations of

natural heritage resources. With the survey results DCR can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

- Coordinate with the Virginia Karst Program (Wil Orndorff), if karst features are encountered.
- Coordinate with DGIF to ensure compliance with protected species legislation. All proposed routes pass across the southwestern end of the Crooked Run Conservation Site, home to the two caves housing the federally listed threatened Madison Cave Isopod.
- Perform right of way maintenance within the conservation site by hand or by use of a wetland approved herbicide.
- Implement and strictly adhere to applicable state and local erosion and sediment control/storm water management laws and regulations, to minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities.

Contact DCR's Division of Natural Heritage (telephone (804) 786-7951) if a significant amount of time passes before the project is implemented.

8. Wildlife Resources.

8(a) Agency Jurisdiction.

The Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state or federally listed endangered or threatened species, but excluding listed insects (*Virginia Code* Title 29.1). DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 *et seq.*), and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce, or compensate for those impacts.

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8(b) Dominion Virginia Power Proposed Route - Alternative 1

The DGIF expressed concern that the Proposed (Preferred) Route may result in adverse impacts upon wildlife resources under the Department's jurisdiction. Such impacts may result from loss of forest cover, increased forest fragmentation, loss of wetlands, and increased erosion and sedimentation. The less direct, Proposed Route

(Southern Route) would be 81.1 miles long, following the existing power line right of way (ROW) from Frederick County, through Front Royal, into Fauquier, and northeastern Rappahannock Counties, crossing Culpeper, returning to eastern Fauquier and entering Prince William County, terminating in Loudoun County. The proposed Route would require approximately 461 acres of additional right of way to be cleared, and would cross 78.1 acres of wetlands, 136 streams, 85.2 acres of forest land, and 38.9 acres of agricultural/open land.

8(c) Dominion Virginia Power Alternate (I-66) Route

The shorter, 53.3 mile Dominion Virginia Power (I-66) Alternate Route follows the Interstate Route 66 Corridor across the Counties of Warren, Fauquier, Prince William into Loudoun County, would result in significantly lower impacts upon forests, wetlands, streams, and open land. It is clearly the less environmentally damaging alternative. Accordingly, if a transmission line must be built and the no-build option is not feasible, the Department of Game and Inland Fisheries recommends the Alternate Route. In this regard, DGIF agrees with previous comments from the Department of Conservation and Recreation (see Application, Volume VI of VI, attachment 2.F.1., March 19, 2007 letter from Department of Conservation to Ed Bowers of Burns and McDonnell, page 11, second paragraph) and the U.S. Fish and Wildlife Service.

8(d) Wildlife Concerns

The remaining wildlife resources analysis focuses on the following wildlife resource and habitat topics and includes recommendations for minimizing adverse effects upon each:

- State-listed threatened species;
- Stockable trout streams;
- Smallmouth bass and largemouth bass fisheries (a topic in itself);
- Species of moderate conservation need (Tier IV) under the Virginia Wildlife Action Plan; and
- Species of high conservation need (Tier III) under the Virginia Wildlife Action Plan.

8(e) State-listed Threatened Species.

The following discussions relate to species listed by the Department of Game and Inland Fisheries as threatened species.

(i) Wood Turtle.

At the western end of the project, Meadow Brook is classified as a Threatened and Endangered Species Water because of the presence of the threatened wood turtle. By way of mitigating potential adverse impacts upon this critical resource, DGIF recommends, first, that a qualified biologist conduct wood turtle habitat assessment in

Meadow Brook and its tributaries. The results of this assessment should be submitted to the Department for its review and comments (see “Regulatory and Coordination Needs,” item 8).

Before any work is undertaken that may affect suitable wood turtle habitat, or within 300 feet of Meadow Brook or its tributaries, a qualified and permitted biologist should conduct a survey for wood turtles. It is important that this survey take place immediately prior to construction, to ensure that no wood turtles wander into the impact area. Any wood turtles encountered and in danger from construction activities should be safely relocated to suitable habitat in Meadow Brook or its nearest perennial tributary. All relocations should be coordinated with DGIF biologist J. D. Kleopfer (telephone (804) 829-6580; see also “Regulatory and Coordination Needs,” item 8).

Similarly, DGIF records indicate that the wood turtle occurs in Warren County, in the vicinity of Cedarville, Crooked Run, and the Shenandoah River. To mitigate adverse impacts to the wood turtle, DGIF recommends wood turtle habitat assessments, surveys, and possible relocations similar to those recommended for the Meadow Brook wood turtle inhabitants above.

(ii) Upland Sandpiper.

The upland sandpiper has been documented approximately 2 miles north of Cedarville in Warren County, and near Remington in Fauquier County. DGIF recommends that a qualified biologist conduct a habitat assessment for the upland sandpiper throughout the selected route in Loudoun, Fauquier, Warren, and Frederick Counties. The results of this assessment should be submitted to the Department for its review and comments (see “Regulatory and Coordination Needs,” item 8).

Any land clearing within areas identified as upland sandpiper habitat should be scheduled to avoid the nesting season for this species, which is April 1 through July 31. If this is not possible, then upland sandpiper surveys should be conducted during the year of construction. Survey protocols and results should be coordinated with DGIF for its review and comments. If the surveys do not document upland sandpiper activity, then the recommended time-of-year restriction will not be necessary.

iii. Loggerhead Shrike.

The loggerhead shrike has been documented approximately 2 miles from the project near High Knob in Warren County. To mitigate potential adverse impacts upon this species, DGIF recommends that a qualified biologist conduct a habitat assessment for the upland sandpiper throughout the selected route in Loudoun, Warren, Rappahannock, and Frederick Counties. The results of this assessment should be submitted to the Department for its review and comments (see “Regulatory and Coordination Needs,” item 8).

According to DGIF, any land clearing within areas identified as loggerhead shrike habitat should be scheduled to avoid the nesting season for this species, defined as April 1 through July 31. If this is not possible, then loggerhead shrike surveys should be conducted during the year of construction. Survey protocols and results should be coordinated with DGIF for its review and comments. If the surveys do not document loggerhead shrike activity, then the recommended time-of-year restriction will not be necessary.

(iv) Henslow's Sparrow.

The Henslow's sparrow has been documented in the vicinity of Manassas Battlefield, and within 1.5 miles of the northeastern portion of the project, in Loudoun County. To mitigate potential adverse impacts upon this species, DGIF recommends that a qualified biologist conduct a habitat assessment for the Henslow's sparrow throughout the selected route in Loudoun and Prince William Counties. The results of this assessment should be submitted to the Department of Game and Inland Fisheries for its review and comments (see "Regulatory and Coordination Needs," item 8).

According to DGIF, any land clearing within areas identified as loggerhead shrike habitat should be scheduled to avoid the nesting season for this species, defined as April 1 through August 31. If this is not possible, then loggerhead shrike surveys should be conducted during the year of construction. Survey protocols and results should be coordinated with DGIF for its review and comments. If the surveys do not document Henslow's sparrow activity, then the recommended time-of-year restriction will not be necessary.

(v) Green Floater.

The green floater occurs at the confluence of the Rappahannock River and the Jordan River, which would be crossed by the proposed route. According to DGIF, both of these rivers are Potential Anadromous Fish Use Areas. Accordingly, DGIF recommends that in-stream activities be scheduled to avoid the spring spawning and migration season, which is defined as February 15 through June 30. In addition, the applicants should note the coordination requirements relative to all in-stream activities; see "Regulatory and Coordination Needs," item 8.

(vi) Madison Cave Isopod.

The Department of Game and Inland Fisheries agrees with previous comments by the Department of Conservation and Recreation and the U.S. Fish and Wildlife Service concerning this species (see *Dominion Application No. 233, Volume VI of VI*, Attachment 2.F.1, DCR letter dated March 19, 2007, pages 2-3; and *Trailco Route Evaluation Report and Environmental Report* (within the Trailco application document), Appendix 1, DCR letter (a) to Louis Berger Group, dated October 27, 2007, page 2). The Madison cave isopod is listed as threatened by the federal as well as the state government. DGIF has legal and regulatory authority over all wildlife, except for listed

plants and listed insects. Further coordination regarding the Madison cave isopod should include DGIF as well as DCR and the Fish and Wildlife Service; see “Regulatory and Coordination Needs,” item 8.

8(f) Species of Moderate Conservation Need (Tier IV) under the Virginia Wildlife Action Plan.

A number of bird species, considered to be Species of Moderate Conservation Need (Tier IV) according to the Virginia Wildlife Action Plan, have been documented in the vicinity of the project. All of these species use some type of forest cover as part of their habitat requirements. The species are:

- gray catbird
- rose-breasted grosbeak
- scarlet tanager
- wood thrush
- eastern towhee
- Kentucky warbler
- worm-eating warbler
- Canada warbler
- black-and-white warbler
- Louisiana waterthrush
- Ovenbird
- eastern wood pewee

8(g) Forest Habitat.

To minimize potential adverse impacts upon these and other forest-dwelling species, DGIF recommends minimizing, to the greatest extent possible, the loss and fragmentation of forest cover. Any tree clearing activities should be scheduled to occur outside the songbird nesting season, which is approximately April 15 through August 1.

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8(h) Trailco Proposed Alternate Routes

According to the DGIF, critical wildlife resources may be impacted due to the State Line to Meadowbrook (Trailco) portion of the project. The streams that would require crossings for this portion of the project include Fall Run, Furnace Run, Lick Run, Froman Run, Fawcett Run, and Buffalo Marsh Run. According to DGIF, Furnace Run, Froman Run, and the lower reach of Buffalo March Run are Designated Threatened and Endangered Species Waters, due to the presence of state Threatened wood turtles.

Meadow Brook is a Class V stockable trout stream. To minimize potential stocking and/or angling conflicts, the Department of Game and Inland Fisheries

recommends that the applicants contact the regional fisheries manager in the DGIF Verona office (telephone (540) 248-9360). See also "Regulatory and Coordination Needs," item 8.

The Shenandoah River is one of the top smallmouth bass rivers in the eastern United States. This river also supports an excellent largemouth bass fishery. To protect this important resource, DGIF recommends that all in-stream activities within the River be scheduled to avoid the warmwater fish spawning season, which is defined as April 15 through July 15.

DGIF's Recommendations

i. Alternative. Select Alternate (I-66) Route if a "no build" option is not feasible.

ii. Stream Crossings. All equipment crossings should be constructed using clear-span bridges. The Department particularly recommends bridges, as opposed to culverts, at larger perennial stream crossings. All crossing structures should be designed to prevent dirt and other materials from washing into the streams. The structures should be cleaned regularly, particularly if rain is predicted. In addition, all crossing structures should be removed upon completion of the crossing and restoration of the site, rather than maintaining the structures for the life of the project.

iii. Erosion and Sediment Controls. DGIF recommends strict erosion and sediment control measures throughout the project. In addition to conducting all in-stream work "in the dry," DGIF recommends wire-reinforced sediment fencing and the use of straw bales along streams. Any water that accumulates within a cofferdam or work trench should be pumped into a "frac tank," sediment basin, and/or sediment bag in order to allow sediment to settle out. When the water is discharged, it should be through a stable, well-vegetated area.

iv. Entrapment of Small Animals. To minimize the entrapment of small animals, DGIF recommends that only biodegradable erosion matting be used during site restoration activities, particularly along streams. In addition, natural stream channel design principles should be incorporated into streambank restoration activities. Moreover, native vegetation should be used to the fullest extent possible to restore a construction site.

v. Streamside Buffer Areas. DGIF understands that it is standard practice to maintain 100-foot buffers along streams and active ditches. In these buffers, vegetation clearing is minimized and conducted only by hand, and care is taken to prevent soil disturbance. DGIF recommends that these buffers be greater than 100 feet, ideally 300 feet, along all of the following:

- threatened and Endangered Species Waters,
- direct tributaries to these waters, and
- anadromous fish use areas.

iv. Coordination. DGIF recommends coordination with the U.S. Fish and Wildlife Service and the DGIF for all wildlife, excluding listed insects and plants.

9. Forest Resources.

The Virginia Department of Forestry (DOF) did not respond with comments pertaining to the forest resources of the Commonwealth. To the extent practicable, we recommend the applicants implement the appropriate measures during construction to protect trees not slated for removal. Questions pertaining to tree protection and forest resources of the Commonwealth may be directed to Todd Groh at Department of Forestry (telephone (434) 220-9044).

10. Geologic Resources.

The Virginia Department of Mines, Minerals and Energy (DMME) stated it does not anticipate this project to result in significant impacts to mineral resources of the Commonwealth. Based on its review the information provided by the applicants and several geologic maps, DMME offers the following comments:

- 1:100,000 scale geologic mapping is available for the entire project area. 1:24,000-scale geologic mapping is available for portions of the area. Maps may be obtained from the Virginia Division of Mineral resources sales office at (434) 951-6351;
- Most of the Shenandoah portion of the project area is underlain by limestone and dolostone bedrock; karst conditions are possible in this area;
- In the vicinity of Mountain Falls and in the area between Kline's Mill and Cedarville, and in several other places, the route is underlain by black shale, including the Milboro Shale and a portion of the Martinsburg Formation; these rocks have a higher than average potential to become acidic upon exposure creating acid drainage and have a higher than average potential to become acidic upon exposure, creating acidic drainage and premature failure of concrete and metal structures; special consideration may be needed during planning and construction in these areas.

Contact Matt Heller of DMME (telephone (434) 951-6364) for additional information, regarding geologic and mineral resources of the Commonwealth.

11. Historic and Archaeological Resources.

11(a) General Comments.

i. DHR's Review and Coordination Process

The Department of Historic Review (DHR) stated that its comments are intended as technical assistance to the Virginia State Corporation Commission (SCC) in evaluating the Dominion Virginia Power (Dominion) and Trans-Allegheny Interstate Line Company (Trailco). Applications for the above-referenced projects and do not fully satisfy consultation with DHR as may be required by Section 106 of the National Historic Preservation Act.

ii. Criteria for Measuring Visual Effects.

In analyzing potential visual effects for their respective proposed routes, both Trailco and Virginia Dominion Power defined the range of visual effects (impacts) for historic properties as follows:

- Minimal impacts would occur within viewsheds that have existing transmission lines, locations where there will only be a minor change in tower height, and/or views that have been partially obstructed by intervening topography and vegetation.
- Moderate impacts would include viewsheds with expansive views of the transmission line, more dramatic changes in the line and tower height, and/or an overall increase in the visibility of the Route from the historic properties.
- Severe visual impacts would be the result of a dramatic increase in the height of the transmission lines and towers and the close proximity of the routes to the historic properties.

DHR stated that it agrees with these definitions of visual effects for the purposes of this review. Neither report referred to the National Register of Historic Places criteria, "setting," for determining integrity of historic properties, particularly with respect to historic viewsheds. It is DHR's position that the views associated with these historic properties should be considered integral to their setting. Visual effects on those historic viewsheds are therefore to be evaluated with this consideration in mind.

iii. DHR's Evaluation of Visual Impact Analysis.

DHR's comments focus on the potential visual effects of the proposed project on historic properties previously determined eligible for or already listed on the National Register of Historic Places and the Virginia Landmarks Register, and located within a one-mile study area consisting of ½ mile on either side of the proposed and alternate route centerlines. DHR requested that Trailco and Dominion provide viewshed analyses for 54 historic properties shown through GIS mapping to have views toward the transmission line. Four of the properties were evaluated for more than one route, for a total of 58 evaluated properties. These historic properties include Civil War battlefields, numerous historic and rural historic districts, and individual properties. Field photography documented views from each historic property toward the proposed and alternate transmission lines, and served as the basis for photo-simulations illustrating the proposed transmission lines and tower structures.

In considering the potential visual effects of this new transmission line, DHR's primary concern was to evaluate the degree to which the integrity of *setting* for these historic properties would be affected. Setting, or the physical environment of the property and its character, is a key criterion for evaluating integrity, and one which is most affected by the introduction of non-historical visual elements such as transmission lines. In assessing minimal, moderate, and severe visual effects as presented by the two reports from Trailco and Dominion, DHR's comments focus on how these new visual elements might intrude upon historic viewsheds. For DHR's full comments on the viewshed analyses, see the Attachment to DHR's comments.

DHR carefully considered the fact that both proposed routes would be constructed in existing transmission line corridors, thus reducing the overall potential visual impact on most historic properties within the study areas. In many cases, new visual effects would likely be minimized by the distance from historic properties, intervening vegetation, topographic conditions, and the existing transmission lines and structures.

However, DHR recognizes that the photographic documentation utilized for these studies may not represent the full visual impacts of the proposed routes upon historic properties. While the field photographs represent views from selected locations associated with historic properties, they may not fully capture the panoramic viewsheds integral to landscape settings, particularly for battlefields and rural agricultural properties. Other engineering requirements to be determined at a later stage in the construction process, such as the full tower height or actual tower spacing, may represent visual impacts above and beyond the existing transmission line that cannot be assessed with the current photo-documentation. Similarly, a critical determinant of potential visual effects also may be the expansion of existing rights-of-way, an element that was not specifically addressed by the photo-simulations which focused on the elevation and location of new towers. As a result, DHR recognizes that the loss of vegetation buffers due to right-of-way expansions may significantly affect the viewsheds a number of these historic properties. Finally, there is the potential for visual effects to

unevaluated or unrecorded historic properties that may be located within the project study area, as these viewshed analyses were limited to those properties either eligible for or listed on the National Register of Historic Places.

With these caveats in mind, DHR would like to reiterate that, due to the factors discussed above, the construction of the transmission line may have far greater visual impacts upon the setting of historic properties than can be determined from the limited viewshed analyses presented by Trailco and Dominion Virginia Power.

In fact, DHR cannot fully assess the potential visual impacts without knowing the specific location and height of new towers, as well as the effect of vegetation removal due to right-of-way expansion. DHR also strongly encourages further consultation with the National Park Service individual park units as well as the American Battlefield Protection Program for their comments regarding the project's impacts on Civil War battlefields and the Appalachian Trail. Trailco and Virginia Dominion Power should also pursue further consultation with other constituencies, such as the owners of historic properties, the Appalachian Trail Conservancy, and other affiliated historic preservation organizations to insure that the nature of visual impacts to historic properties is fully explored.

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11(b) Dominion Virginia Power Proposed Route (Alternative 1)

Dominion Virginia Power's Proposed Route will be constructed within an existing transmission line corridor extending from the Meadow Brook to Loudoun substations. Dominion Virginia Power provided documentation on twenty-nine recorded properties within the study area. Based on the documentation submitted, it is DHR's opinion that the Proposed Route will have minimal to moderate visual effects to a majority of historic properties within the study area due to its construction in an existing transmission line corridor, the presence of intervening vegetation and topography, and the corresponding distance from the historic properties. New visual effects are primarily related to the increase in number of towers and tower heights, which in combination will create new areas of visibility within the transmission line corridor. Two historic properties within the study area were not evaluated. Manassas Battlefield Pageland and Rt. 29-211 Shed (076-0362) was not located in the field. The report also states that access was denied to Vaucluse (034-0138); however, this property was documented for the Trailco segment (see above).

DHR concurs with the report's recommendations that the project will have no new visual effects on nine historic properties due to distance from the proposed route, intervening vegetation, topography, and modern development: Riverton Historic District (112-5328), Lackawanna/Riverton Historic District (093-0057/112-5328), Riverton United Methodist Church (093-0445), Riverside House (093-0011), Carson Lime

Company-Riverton Quarry (093-0270), Hitch School (030-0708), Locust Grove/Luttrell Farm (078-5095), Fleetwood (023-0066), and the Remington Historic District (288-5001).

Based on the documentation submitted, DHR also concurs that minimal visual effects related to tower height increase or additional visibility of the tower lines in areas previously not visible for the following properties: Indian Spring (034-0080), Ridings-McClunn House (034-0073), Robert McKay House (093-0007), as well as properties associated with the Manassas Battlefield Historic District and Expansion (National Battlefield Park) (076-0271), specifically, Honeywood/Pageline (McKenney Farm) (076-0138) and Swart Family Cemetery (076-0441/076-0362). In these instances, the presence of the existing transmission line, intervening vegetation, and minor changes in tower height would appear to lessen any new visual impacts.

Photo-simulations for several Civil War battlefields depict what appear to be minimal new visual effects as a result of the Proposed Route. At Cedar Creek Battlefield (034-0303), existing transmission lines, including the existing 500 kV corridor which passes through the site near the northern boundary, are currently visible from the Battlefield, as well as areas of modern development associated with Route 11. The Proposed Route will require a ten-foot increase in tower height within the existing right-of-way, but it would appear to pose only minimal new visual effects. At Rappahannock Station Battlefield I (023-5049), the new transmission towers appear to be visible in areas in addition to the existing line, but at a reduced scale due to the distance (3990 feet) and intervening vegetation. The Proposed Route will pass through a portion of Manassas Battlefield Historic District and Expansion (076-0441) utilizing an existing right of way; based on a 15' increase in tower height, the new transmission line would appear to have pose minimal new visual effects. However, DHR recommends that Dominion Virginia Power pursue further consultation with these individual National Park Service park units as well as the American Battlefield Protection Program (NPS) for their full comments on potential visual effects to these historic properties.

While Virginia Dominion Power indicates that minimal visual effects would occur within the existing right-of-way for the Appalachian Trail, DHR believes that the replacement of single tower with two poles at an increased height of 30-50 feet may constitute moderate visual effects, especially if there is an increase in tower visibility outside of the existing right-of-way. It is not clear whether or not the new towers would be visible from Trail sections outside the right-of-way which appear to have significant vegetation cover. DHR recommends that Dominion Virginia Power further consult with the Appalachian National Scenic Trail- National Park Service, and the Appalachian Trail Conservancy for their comments on the visual effects posed by the additional towers at an increased height.

Dominion Virginia Power stated that there will be moderate visual effects for seven historic properties based on expansive views of the transmission line in addition to new areas of visibility, as well as pronounced changes in the line and tower height. For the Putnam-Patton House (076-0179), Kline's Mill (034-0160), and the Front Royal

Country Club (Recreation Park Historic District) (093-0007), the increase in tower height will result in new visual effects, as the towers are now visible above treeline, although there is vegetative screening for much of the increased tower height. DHR concurs with the recommendation of moderate visual effects for these historic properties.

However, with respect to John Marshall's Leeds Manor Rural Historic District (0030-5428), DHR is concerned that the additional visibility of new towers may further impact the historic agricultural setting and panoramic viewsheds integral to this Rural Historic District, and would constitute a severe visual effect. Vegetative buffers and rolling topography are key determinants of tower visibility in this landscape. In order to minimize or avoid new severe visual effects to this historic property, DHR recommends maintaining vegetative buffers as well as sensitive topographic siting of new towers.

Similarly, at Pilgrim's Rest (076-0019), the proposed route's tower height increase in comparison to the existing transmission line is very apparent above treeline. The route extends for some distance along the eastern portion of the property which has some vegetative buffer; however, the property as a whole retains viewsheds which illustrate an open agricultural character. DHR recommends that the visual effects to this property may be considered moderate to severe depending on distance, visibility of existing transmission line structures, and the retention of existing vegetative buffers. A reduction in tower height may also reduce new visual effects.

Documentation for Civil War battlefields, Brandy Station Battlefield (023-5055) and Rappahannock Station II Battlefield (023-5050), depicts the addition of towers at a significantly increased height, ranging from 30-50 feet taller than the existing structures. Although the presence of both the existing 115' towers and modern development currently represent visual intrusions, both battlefields retain large areas of open agricultural character in which the proposed transmission line would be distinctly visible. While lowering the tower height and sensitive siting of new towers might assist in minimizing the additional visual effects, DHR recommends that Dominion Power further consult with the American Battlefield Program for their comments with respect to impacts upon the historic viewsheds of these two Civil War battlefields.

DHR concurs with Dominion's assessment that the proposed route will have severe visual impacts on two historic properties: Bristersburg Historic District (030-5161) and Bristersburg School (030-0586). In both cases, photosimulations indicate that the dramatic increase in tower heights from the existing 66' towers to the proposed 140' structures and their proximity would clearly impact the historic viewsheds associated with these two properties. While the existing transmission line currently runs through the open agricultural areas, the towers are not as evident due to their low height in relationship to any intervening vegetative buffers.

11(c) Dominion Virginia Power Alternate (I-66) Route

DHR Background and Analysis of Dominion's Alternate I-66 Route.

Dominion Virginia Power provided documentation on twenty-three recorded properties that were either previously determined eligible for listing or currently listed on the National Register of Historic Places within a one-mile study area consisting of ½ mile on either side of the proposed and alternate route centerlines. It is DHR's opinion that the Alternate (I-66) Route will have severe visual effects to a majority of historic properties within this study area due to the fact that there is no existing transmission line corridor. The alternate (I-66) route is sited within the VDOT I-66 road corridor 150' right-of-way, but few vertical features of the stature of transmission towers disrupt what is largely a series of panoramic viewsheds of the rural landscape.

Based on the photographic documentation submitted, DHR concurs with Dominion's visual assessment that the following properties would have no new visual effects due to intervening vegetation and distance from the alternate (I-66) transmission line: Woodlawn (076-0122), Delaplane Historic District (030-0002), Haymarket School and Town Hall (233-0006), St. Paul's Episcopal Church (233-0002), and Public School #13 (African-American) (030-0135). DHR also concurs that due to distance and intervening vegetation, there would be minimal visual effects of the alternate (I-66) route on the Walter Thompson Place/Linden Historic District (093-0114) and the Plains Historic District (311-5003). The Southern Railway Depot at Thoroughfare (Repass Depot) (076-0151) will have moderate visual effects which may be addressed by relocating tower structures behind vegetative buffers.

However, DHR believes that the alternate (I-66) route will have severe visual impacts upon the remaining historic properties within the study area: John Marshall Leeds Manor Rural Historic District (030-5428), The Hollow (030-0803), Markham Historic District (030-5157), Crooked Run Valley Rural Historic District (030-5369), Yew Hill (Watt's Ordinary) (030-0060), Ashleigh (Ashley/Hooewood) (030-0005), Aspen Dale (030-0007), Oak Hill (030-0044), Goose Creek to Cromwell's Run Rural Historic District (030-5434), Marshall Historic District (030-5156), Georgetown (Little Georgetown) Historic District (030-5168), Heflin's Store (030-0520), Thoroughfare Gap Battlefield (030-1016), and Thoroughfare Historic District (076-5150). One additional property that would have severe visual effects as a result of the alternate (I-66) route is the Beverley Mill (Chapman's Mill) (076-0002), was erroneously listed as destroyed in the Visual Assessment Report. DHR would like to correct the record, as this property is listed on both the National Register of Historic Places and the Virginia Landmarks Register. Dominion has indicated that information regarding this historic property will be submitted as a Supplement to their SCC Filing for this project.

The severity of the visual impacts posed by the alternate (I-66) route are largely due to the close proximity of the route's alignment to the historic properties. In many cases, the route borders the historic property boundaries often with unimpeded views to the transmission towers, as seen in John Marshall's Leeds Manor Rural Historic District, The Hollow, portions of the Markham Historic District, Crooked Run Valley Rural Historic District, Yew Hill (Watt's Ordinary), Ashleigh (Ashley/Hooewood), Aspen Dale, Oak Hill, Goose Creek to Cromwell's Run Rural Historic District, Thoroughfare Gap Battlefield, Beverley Mill (Chapman's Mill), and Thoroughfare Historic District. Other

historic properties are not in as close proximity to the alternate (I-66) route; however, their associated viewsheds may be severely affected by the intrusion of new transmission towers, such as the Marshall Historic District and the Georgetown (Little Georgetown) Historic District.

DHR's Recommendations on PUE-2007-00031.

Based on the documentation submitted DHR recommends the following:

- Select Dominion Proposed Route in an existing transmission corridor which will have considerably less visual effects upon historic properties than the Alternative I-66 Route. The majority of historic properties will sustain no new visual effects to moderate visual effects based on the transmission line's increased visibility within the existing right-of-way. Nonetheless, the Proposed Route does pose cumulative visual effects. Many of these potential visual effects might be reduced or minimized by sensitive engineering, relocation to take advantage of topographic conditions, and a reduction in tower height. Severe visual effects, however, may result as a consequence of the transmission line's proximity and increased visibility within the setting of an expansive rural landscape for a number of historic properties, including Bristersberg Historic District (030-5161), Bristersburg School (030-0586), John Marshall/Leeds Manor Rural Historic District (030-5428), and Pilgrim's Rest (076-0019).
- Pursue further consultation specifically with the American Battlefield Protection Program, National Park Service, for their comments on potential visual effects to Brandy Station (023-5055) and Rappahannock Station I (023-5049) and II (023-5050) Civil War Battlefields. Areas within these battlefields retain expansive viewsheds of the rural agricultural landscape; this open setting is key to the integrity of these properties. Further consultation with the National Park Service units at Cedar Creek Battlefield (034-0303) and Manassas Battlefield Historic District and Expansion (National Battlefield) (076-0441) for their comments on potential visual effects is also recommended.
- Pursue further consultation with the National Park Service and the Appalachian Trail Conservancy for their comments on potential visual effects to the Appalachian Trail, both within the existing right-of-way and on adjacent trail segments due to a 30-50' increase in tower height.
- Conduct comprehensive archaeological and architectural surveys to determine the full extent of the impacts of the selected route on historic properties and provide a means for the avoidance, minimization, or mitigation of all adverse effects, regardless of which route is selected.

Contact Tonia Horton at DHR (telephone (804) 367-2323, ext. 137 for additional information and coordination.

II. Trans-Allegheny Interstate Line Company, Northwest Virginia 500 kV Transmission Line, Case No. PUE-2007-00033 (Trailco Line)

11(d) Trailco Proposed and Alternate Routes.

DHR Background and Analysis: Trailco's Proposed Alternative B and E.

Trailco's Proposed Route, Alternative B, and Alternative E would be constructed within an existing 500 kV transmission line corridor. The current right-of-way will be increased substantially from 275 to 425' for the Proposed Route, and from 320 to 470' for Alternative E. The Proposed Route and Alternative E are located to the north of the existing line up to Little North Mountain, while Alternative B is located to the south side. At Little North Mountain, the proposed Route shifts to the south of the existing 500 kV line. Alternative B continues on the south side to the Meadowbrook substation. Alternative E remains on the north side of the existing 500 kV line. Trailco provided viewshed analyses for six historic properties within the project study area. It is DHR's opinion that the Proposed Route and Alternative B will have minimal to moderate visual effects upon four historic properties and no effects to two historic properties, as discussed below.

Based on the photographic documentation, DHR concurs that the Proposed Route and Alternative B will have no new visual effects to Buffalo Marsh (034-0140) and Indian Spring (034-0080) due to distance, topography, and intervening vegetation. There will be additional visual effects for three other identified historic properties due to the doubling of tower structures and an increase in tower heights: Vaucluse (034-0138), J.E. Funkhouse Farm (034-0732), and Pleasant Green (034-0084). However, the photodocumentation indicates that new visual effects upon Vaucluse (034-0138) may be minimized by sensitive placement of the new tower structures closer to vegetative buffers or below ridgelines to avoid open views, particularly considering the close proximity of the transmission line corridor (950'). Similarly, the expansive viewsheds associated with J.E. Funkhouser Farm (034-0732) and Pleasant Green (034-0084) might be maintained by siting new towers in a manner that utilizes topography and vegetative buffers as screening.

Cedar Creek Battlefield (034-0303), is located within the study area for the Trailco Proposed and Alternate Routes, with the closest point in the Battlefield Study Area being 3,200' from the Proposed Route, and 3,650' from the Alternate Route. The photographs appear to indicate that new visual impacts would be minimal from this point due to distance and intervening vegetation. However, DHR recommends that the Cedar Creek Battlefield-National Park Service and the American Battlefield Protection Program (also National Park Service) be consulted for comments related to the project's potential visual effects upon these historic properties.

DHR's Recommendations on Trailco Line PUE-2007-00033 .

Based on the documentation submitted DHR recommends:

- Select Trailco Proposed Route which includes Alternative B since this alternative will have minimal to moderate visual effects upon four historic properties and no effects to two historic properties.
- Pursue further consultation with the National Park Service for comments on the potential visual effects to Cedar Creek Battlefield (034-0303).

12. Transportation Impacts.

The Virginia Department of Transportation (VDOT) stated that, based on its preliminary review, it understands that the proposed new transmission line will cross several existing roadways. Although some of the roadways have improvements planned in the adopted regional Commonwealth Long Range Plan (CLRP), it appears that the new transmission line would have minimal impacts on transportation since the new line will be within, or alongside, the existing power company right-of-way.

VDOT noted, however, that the alternate route which proposes to use existing VDOT right-of-way along I-66, could have a potential impact on I-66 long-range widening plans. These power line monopoles could jeopardize any such long-range future widening. Therefore, until more detailed information is provided regarding the placement of the proposed monopoles within the I-66 right-of-way, VDOT stated that the impact of the transmission line cannot be determined.

13. Pollution Prevention.

DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. Pollution prevention techniques also include decisions related to construction materials, design and operational procedures that facilitates the reduction of wastes at the source. We have several recommendations regarding pollution prevention:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to minimizing its environmental impacts, setting environmental goals, and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities will effective EMS through its Virginia Environmental Excellence Program.
- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered.
- Consider contractors' commitments to the environment (such as EMS) when choosing contractors. Specifications regarding raw material selection and construction practices can be included in contract documents and requests for proposals.

- Choose sustainable practices and materials in infrastructure and building construction and design. These could include, but are not limited to, asphalt and concrete containing recycled materials and integrated pest management in landscaping.

DEQ's Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques and EMS. If interested, the applicants may contact Tom Griffin of DEQ's Office of Pollution Prevention (telephone (804) 698-4545).

14. Pesticides and Herbicides.

In general, when pesticides or herbicides must be used, their use should be strictly in accordance with manufacturers' recommendations. In addition, we recommend that the applicants use the least toxic pesticides or herbicides effective in controlling the target species. For more information on pesticide or herbicide use, please contact the Department of Agriculture and Consumer Services (telephone (804) 786-3501).

15. Aviation Impacts.

The Department of Aviation recommends that the applicant follow the requirements of the Federal Aviation Regulations by notifying the Federal Aviation Administration regarding the proposed line construction. In cases where the proposed construction meets any of the following criteria, the submission of an information form to the Federal Aviation Administration is required. The criteria are that the proposed project would:

- exceed 200 feet in height above the ground;
- involve any construction or alteration at any height greater than the imaginary surfaces identified in Federal Aviation Regulation Part 77, extending outward and upward 20,000 feet from any runway at a public use airport, military airport, or airport under construction for public use having a runway of 3,200 feet in length;
- involve any construction or alteration at any height greater than the imaginary surfaces identified in Federal Aviation Regulation Part 77, extending outward and upward 10,000 feet of any public use airport, military airport, or airport under construction for public use having a runway of less than 3,200 feet in length.

See "Regulatory and Coordination Needs," item 12.

16. Local Comments.

As customary, DEQ invited affected localities to participate in the Commonwealth's environmental review of this proposal. This approach is consistent

with the SCC Law (Virginia Code § 56-46.1 A.) which directs the SCC to consider local comprehensive plans which have been adopted pursuant to Virginia Code § 15.2-223 *et seq.* Five of the seven counties which were invited to comment responded. All five counties expressed concerns about inadequate analysis; three of them (Frederick, Fauquier, Prince William) are opposed to the project. Detailed comments from the five counties which responded are attached. A summary of their comments follows:

16(a) Culpeper County.

i. General Comments.

Culpeper County responded to our request for comments in a letter dated July 36, 2007 (attached). Overall, Culpeper County is concerned with the lack of sufficient analysis and the number of environmental impacts associated with the proposed project, including open space, viewsheds, historic-, scenic-, natural-, and cultural resources. The County is concerned that the EA appears to suggest that because the proposed line would parallel an existing transmission line, any potential impacts resulting from the proposed project would not be significant. According to the County, potential impact to resources was not fully considered, including agriculture lands, designated Agricultural and Forestal districts, designated Scenic Byways and Scenic Rivers, historic resources, existing public utilities and infrastructure. Furthermore, if the route through Culpeper County is being seriously considered, the County recommends that efforts should be made to design a facility that would be as unobtrusive to the landscape as possible. The County stated that the proposed new line, the right of way expansion, and the structure type being proposed for the majority of the line are in direct conflict with the goals and objectives of Culpeper County. The County's detailed comments and recommendations are attached for your review.

ii. Two Proposed New School Sites and Associated Recreation Facilities

Culpeper County noted that the proposed alignment goes directly through a large area which has been proffered for dedication to Culpeper County. The County plans to use this area for two schools and a substantial amount of recreational space. Therefore, the scenic integrity of this area is of particulate importance. This was not fully evaluated in the EA. According to the County, the placement of an electric transmission facility in this area is in direct conflict with the County's goals and objectives.

16(b) Fauquier County

i. General Comments.

The Fauquier County Board of Supervisors responded to our request for comments in a letter dated July 31, 2007 (attached). Overall, Fauquier County is strongly opposed to both the proposed and alternate Dominion corridors outlined in the

EA, each of which would have severe adverse effects on the environmental, cultural, historical, scenic, agricultural, forestal and historic resources of the County.

A synopsis of the County's concerns and recommendations follows. The County's detailed comments and recommendations are also attached for your review.

ii. Agricultural and Forestal Lands

Fauquier County contains thousands of acres of productive agricultural and forestal lands which will be adversely impacted by the proposed and alternate routes. The Burns and McDonnell study states that the proposed route crosses 38.9 acres of agricultural land and the alternate route crosses only 1.9 acres of agricultural land. The study makes no mention of the anticipated impact of either proposal on forestal land and does not break down the acreage to be condemned for the project by County. Additional study is warranted to determine the extent of the true impact on the County's agricultural and forestal resources. Section 3.1-18.5 of the Code of Virginia evidences the strong emphasis that the Commonwealth has placed upon the consideration of agricultural and forest resources, and requires consideration by state agencies involved in major state projects of the loss of agricultural and forestal land. Factors to be considered in determining the significance of agricultural land include use value taxation, class I, II, III or IV agricultural soils, existence of agricultural and forestal districts, or significant contribution to the local economy or rural character of the area in which the land is located. According to the County, these resources have not been adequately addressed within the context of this important state policy.

Of additional concern is the fact that the Burns and McDonnell study does not differentiate between the impact of the transmission line on agricultural land and suburban land. The impact to agricultural land is considerable and differs significantly from the effect on developed suburban land. Transmission corridors reduce usable agricultural land, decrease agricultural productivity and often divide farms in a detrimental fashion. The expansion of the existing corridor will worsen these already considerable impacts. According to the County, these effects have not been adequately considered.

iii. Cultural landscape of Fauquier County including the equine industry

Fauquier County concurs with the recommendations of the Department of Historic Resources dated January 26, 2007 which noted deficiencies with respect to the cultural and historic resource analysis conducted by Dominion and suggested a "cultural landscape" analysis in accordance with the National Park Service Guidelines.

In addition, Fauquier County notes that the analysis completely fails to consider the impact on an important cultural and economic resource, the equine industry. The Virginia Horse Industry Board, created by statewide referendum in 1994 to support the equine industry, (www.vhib.org) cites a 2001 Equine Survey estimating that the horse industry has a \$1 billion impact on the state's economy, and supports approximately

20,000 jobs statewide. According to the County, the strength of this industry is based upon the scenic vistas and pristine open space in the County, and would be severely impacted by either proposed alignment.

The County stated that the analysis of the impact on the cultural landscape of Fauquier County should be re-evaluated and recommendations made by DHR should be reconsidered. According to the County, the analysis should be revised to include field investigations to identify and evaluate cultural resources, architectural, archeological, cultural landscapes and rural districts.

iv. Conservation easements (including agricultural and forestal districts)

The conservation easements and other agricultural resources shown in the EA appear to be based upon incomplete and out of date information and omit county non-common open space granted to the County as part of its conservation subdivision process (approximately 9395 acres), conservation easements recently approved through the County's purchase of development rights program pursuant to the provisions of Section 10.1-1700 *et seq.* of the open space land act and Agricultural and Forestal districts (approximately 81,019 acres).

The purpose of these easements and the incentive to create new easements affording similar benefits is thwarted by the construction of industrial structures through, adjacent to, or in the vicinity of these easements. According to the County, these districts have not been shown on the EA maps and the impact on these districts has not been addressed.

v. Scenic rivers and byways

Fauquier County's comments appear above under Item 7(b) i Scenic Rivers, Byways, and Trail on page 26.

vi. Ecosystems – Forest Function

The Burns and McDonnell report fails to account for the effect of widening the existing transmission line corridor on forest structure and the connectivity of forest cores. Along the alternate route, similar effects would occur if land is cleared to the edge of the VDOT right-of-way along the existing forest currently buffered by those trees. According to the County, a review of the aerial photographs submitted in the map appendix to the EA demonstrates that both the proposal and the alternate will require considerable clearing of existing forest. The County believes this should be addressed.

vii. Federal Endangered Species Act and Virginia protected species legislation

According to the County, the report also does not address the impact to rare species and sensitive ecological communities (see County's response for details). See also Environmental Impacts and Mitigation item 7(a). *Natural Heritage Resources* and

item 8. *Wildlife Resources*, above, for a discussion of Protected Species provided by resource agency reviewers.

viii. Water resources and wetlands

According to the County, no analysis has been presented regarding the extent to which either alternative may result in the conversion of forested wetland to emergent wetland. Fauquier County is within the Occoquan and Chesapeake Bay watersheds and the protection of these wetlands is a component of the Chesapeake Bay protection initiatives. The County recommends that additional analysis regarding protection of water resources and wetlands be conducted.

ix. Geologic Resources

According to the County, no analysis of the impact on these historically significant geologic resources and features has been conducted. The County recommends that additional analysis regarding these resources should be conducted.

x. Requirements pursuant to County Comprehensive Plan and Zoning

Chapter 2 of the Fauquier County Comprehensive plan outlines resources which the County has identified for protection. These resources include prime agricultural soils which are not covered by forest (Map 2.5, attachment B), forest cover (Map 2.9, attachment C), steep slopes, floodplains, scenic areas, scenic roads, and historical features. Each of these resources would be damaged by both the proposed route and the alternate route.

Inadequate analysis has been conducted with respect to the impact of the proposal on these resources. Chapter 8 of the County's Comprehensive plan is dedicated to Rural land use, and outlines the County's goals with respect to preservation of agricultural and Rural Conservation resources. The County recommends that additional analysis regarding these resources should be conducted.

16(b) Frederick County

i. General Comments.

Frederick County responded to our request for comments in a letter dated August 13, 2007 (attached). Overall, Frederick County is strongly opposed to the proposed project. On January 10, 2007, the County Board of Supervisors adopted a resolution (attached) encouraging the applicants to "make known the need and justification for the transmission line..." The Resolution further stated that the County was "not in favor of the proposal to locate the transmission line through Frederick County." The County's detailed comments and recommendations are also attached for your review.

ii. Agricultural and Forestry Lands

According to Frederick County, the County has repeatedly advised representatives from the power companies that they (power companies and their representatives) are using incorrect and outdated Agricultural and Forestal District information during preparation of impact analyses. Frederick County expressed concern that, despite the County's efforts to provide corrective-guidance, the applicants and their representatives continue to estimate impacts to these resources based on outdated and incomplete conservation easement mapping information. Therefore, the analysis conducted with respect to the impact of the proposal on these resources is inadequate.

16(c) Prince William County

i. General Comments.

Prince William County responded to our request for comments in a letter dated August 1, 2007 (attached). Overall, Prince William County opposes the proposed project. The County expressed concerns regarding the potential impact to wetlands, streams and water quality resources, Chesapeake Bay Preservation Areas, existing public utility- and transportation-infrastructure, archaeological sites, visual impacts to battlefields and cultural resources. The County's detailed comments and recommendations are also attached for your review.

ii. Visual Impacts

The County stated that it is inconclusive that the additional height of transmission lines towers may produce minimal adverse effect, based on the information provided.

iii. Cultural Resources

The County noted that, according to the EA, no studies were conducted to identify previously unrecorded architectural resources. According to the County, recent archaeological studies document "significant archaeological resources within the existing Line 569 Corridor..." that are not addressed. The County believes these sites may be adversely affected. Therefore, the analysis conducted with respect to the impact of the proposal on these resources is inadequate.

iv. Chesapeake Bay Preservation Areas.

Prince William County has designated its entire jurisdiction as a Chesapeake Bay Preservation Area. Both the Proposed Route and the Alternate Route (I-66) will affect both Resource Protection Areas and Resource management Areas comprising the County's CBPA. The County's comments on CBPA impacts appear above under Item 4.

16d) Rappahannock County

i. General Comments.

Rappahannock County responded to our request for comments in a letter dated July 27, 2007 (attached). Overall, Rappahannock County has many concerns about the project as currently proposed. The County expressed concerns regarding the potential impact to open-space easements, Scenic Resources, agriculture, conservation easements, Agricultural and Forestal Districts, and socioeconomics. The County's detailed comments and recommendations are also attached for your review.

ii. Transmission Facility Design and Terrorism Threat

The County also expressed concern with the suitability of the proposed tower design and the potential for increased vulnerability to terrorism.

16(e) Northern Virginia Regional Commission

i. General Comments.

The Northern Virginia Regional Commission responded to our request for comments in a letter dated July 31, 2007 (attached). The Commission expressed concern that the project would occur within the borders of the Occoquan Reservoir watershed, a public drinking water source. Therefore, special attention should be given towards erosion and sediment controls during construction, and the post-construction stormwater quality management. The Northern Virginia Regional Commission's detailed comments and recommendations are also attached for your review.

17. Impacts on Coastal Resources and Uses.

Pursuant to the Coastal Zone Management Act of 1972, as amended, prior to initiating activities, applicants for federal approvals, licenses or permits are required to determine the consistency of their activities affecting Virginia's coastal resources or coastal uses with the Virginia Coastal Resources Management Program (see section 307(c)(3) of the Act and 15 CFR Part 930, sub-part D, section 930.57). In this case, Prince William County is located in Virginia's designated coastal management area. Therefore, if any federal approval, such as section 404 permits under the Clean Water Act (including Nationwide permits) from the U.S. Army Corps of Engineers, is required, the applicant must certify that the project is consistent with the VCP. This involves an analysis of the activities in light of the Enforceable Policies of the VCP (see Attachment 1), and submission of a consistency certification reflecting that analysis and committing Dominion's actions to be consistent with the Enforceable Policies. We encourage Dominion to consider the Advisory Policies of the VCP as well (Attachment 2).

REGULATORY AND COORDINATION NEEDS

1. Water Quality and Wetlands. Impacts to surface waters and jurisdictional wetlands related to power line construction may require Section 404 Clean Water Act permitting by the Army Corps of Engineers, and a Virginia Water Protection (VWP) Permit issued by DEQ's Northern Virginia Regional Office.

It is possible that the Trailco (western) portion of the project, processed under SCC Case No. PUE-2007-00033, will qualify for a Nationwide Permit #12, in which case a VWP Permit may not be required. In order for the Nationwide Permit #12 to apply, the impacts to wetlands must be less than one-half (1/2) acre and impacts to streams from the project must be less than 1,500 linear feet.

In any case, permitting action is commenced by submitting a completed Joint Permit Application (JPA) to the Virginia Marine Resources Commission (VMRC) at the following address:

2600 Washington Avenue
Newport News, Virginia 23607

The VMRC will distribute the completed JPA to appropriate agencies. Questions on the applicability and fulfillment of permit requirements may be addressed to DEQ's Northern Virginia Regional Office (Tom Faha, Water Permits Manager, telephone (703) 583-3846). To obtain a JPA form, the applicants may contact the Marine Resources Commission (Elizabeth Gallup, telephone (757) 247-2200).

2. Subaqueous Lands Impacts. Pursuant to *Virginia* Code section 28.2-1204, the Marine Resources Commission has jurisdiction over any encroachments in, on, or over any State-owned rivers, streams, or creeks in the Commonwealth. Accordingly, any encroachment channelward of ordinary high water along natural rivers and streams with a drainage area of greater than 5 square miles and a flow of greater than 5 cubic feet per second will require a permit from VMRC. As with the VWP (item 1, preceding), the Joint Permit Application form must be used to apply for VMRC permits. See item 1, preceding, for contact information.

3. Erosion and Sediment Control; Stormwater Management. Underground power line construction must comply with local ESC and SWM program requirements as locally implemented (Virginia Erosion and Sediment Control Law §10.1-563; Virginia Erosion and Sediment Control Regulations §4VAC50-30-30; Virginia Stormwater Management Law §10.1-603.3; Virginia Stormwater Management Regulations §4VAC-3-20-90-141). The applicants must contact affected County officials to determine local requirements. A site-specific erosion and sediment control (ESC) plan may be submitted for review and approval to DCR's Potomac Watershed Office at (540) 347-6420.

4. VPDES Stormwater Management General Permit. For projects involving land-disturbing activities equal to one acre or more (2,500 square feet or more in a Chesapeake Bay Preservation Area), Dominion is required to apply to the Department of Conservation and Recreation for registration coverage under the VPDES General Permit for Discharges of Stormwater from Construction Activities. Specific questions regarding the Stormwater Management Program requirements should be directed to the Department of Conservation and Recreation's Division of Soil and Water Conservation (Holly Sepety, telephone (804) 225-2613).

5. Air Quality Regulation. This power line construction proposal is subject to air pollution control regulations administered by the Department of Environmental Quality. The state air pollution regulations that may apply to the project are: fugitive dust and emissions control (9 VAC 5-50-60 *et seq.*) and open burning restrictions (9 VAC 5-40-5600 through 5645). The applicants should contact appropriate local officials to determine any local requirements for open burning.

The proposed transmission line will include Frederick, Loudoun, and Prince William Counties which are designated ozone (O₃) non-attainment areas. Therefore, the applicants should take all reasonable precautions to limit emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), principally by controlling or limiting the burning of fossil fuels. Permits may be needed for fuel-burning construction equipment. For information on applicability and fulfillment of permit requirements, the applicants should contact DEQ's Northern Virginia Regional Office (Mr. Terry Darton, telephone (703) 583-3845) and DEQ's Valley Regional Office (Mr. Ron Philips, telephone (540) 574-7800).

6. Solid Waste and Hazardous Substances. All solid waste, hazardous waste, and hazardous materials must be managed in accordance with all applicable federal, state, and local environmental regulations.

6(a) Applicable state regulations include:

- Virginia Waste Management Act (Code of Virginia Section 10.1-1400 *et seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); and
- Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110).

6(b) Applicable federal regulations are:

- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Section 6901 *et seq.*), and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and
- U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Parts 107, 171.1-172.558.

Contact DEQ's Northern Regional Office (telephone (703) 583-3880) or DEQ's Valley Regional Office at (540) 574-7800 (as appropriate), concerning the location and availability of suitable waste management facilities in the project area or if free product, discolored soils, or other evidence of contaminated soils are encountered.

7. Chesapeake Bay Preservation Act. The segment of the project passing through Prince William County must meet the requirements of the Chesapeake Bay Preservation Act (Virginia Code §§ 10.1-2100 through 10.1-2114) and Chesapeake Bay Preservation Area Designation and Management Regulations (Virginia Code § 9 VAC 10-20-10 *et seq.*). Although transmission lines are conditionally exempt from the CBPA, it is subject to the Erosion and Sediment Control Law (§ 10.1-560 *et seq.* of the Code of Virginia), and the stormwater management criteria consistent with water quality protection provisions (4 VAC 3-20-71 *et seq.*) of the Virginia Stormwater Management Regulations (4 VAC 3-20). For additional information, contact Alice Baird, DCR-DCBLA at (804) 225-2307 or Kevin Black, Prince William County at (703) 792-6620.

8. Protected Species Legislation and Wildlife Resources. Federal and State Protected Species Legislation will apply if there is any taking of Threatened or Endangered Species. The applicants must comply with the Federal Endangered Species Act (16 U.S. C. sections 1531 *et seq.*), and Virginia protected species legislation (Virginia Code §29.1-563 *et seq.*). To ensure compliance with protected species legislation, contact Amy Ewing, DGIF Environmental Services Section Biologist (telephone (804) 367-2733).

9. Historic and Archaeological Resources. To ensure compliance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations at 36 CFR 800, coordinate with the Department of Historic Resources, Ethel Eaton at (804) 367-2323 ext. 112.

10. Coastal Zone Management Act/Federal Consistency Regulations. Pursuant to the Coastal Zone Management Act of 1972, as amended, projects requiring federal permits (e.g., Nationwide Permit 12, or an individual Section 404 CWA permit from the US Army Corps of Engineers), must be consistent with the enforceable policies of the VCP. Accordingly, the portion of the line located in Prince William County must comply with the federal consistency regulations found in 15 CFR 930, Subpart D. For more information, contact Ellie Irons, DEQ Office of Environmental Impact Review (OEIR), at (804) 698-4339, or Ernie Aschenbach, DEQ-OEIR, at (804) 698-4326.

11. Transportation Impacts. Any VDOT right-of-way land use requirements, lane closures, traffic control, or work zone safety issues should be coordinated with the affected locality and the appropriate VDOT Office corresponding with the locality where work is being performed. For more information, contact Mary T. Stanley at VDOT (telephone (804) 786-0868).

12. Aviation Hazards Information. If the transmission line project should meet any of the criteria identified by the Department of Aviation (see "Environmental Impacts and

Mitigation,” item 15), the applicant must file a completed Form 7460-1, “Notice of Proposed Construction or Alteration” with the Federal Aviation Administration’s Eastern Region Office (address given on form). The form is available at the Federal Aviation Administration web site, <http://www.faa.gov>. Questions may be directed to the Virginia Department of Aviation (Rusty Harrington, telephone (804) 236-3632).